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ABSTRACT

The three papers in this collection provide testimonial descriptions of the power of successfully implemented innovative procedures to advance the academic achievement of students whose life circumstances place them at risk of academic failure. In the first article, "20/20 Analysis: A Citywide Computer-Based Application," David J. Heistad and Maynard C. Reynolds present 20/20 analysis as an alternative to prevailing practices in establishing the eligibility of students for special education and related services. It is argued that a major fault with current classification systems is that, because school districts are able to draw special education funds when students are placed in special education programs, financial incentives are limited to inputs only. In contrast, 20/20 analysis is an output-oriented approach to identifying students in need of special services. In the second paper, "Effective School Responses to Student Diversity in Inner-City Schools: A Coordinated Approach," Margaret C. Wang, Jane Oates and Nancy Weishew describe the successful implementation in three inner-city schools of the Learning City Program, a school restructuring model based on meeting the needs of the diverse populations schools are increasingly serving. The last paper, "Organizing Schools into Smaller Units: Alternatives to Homogeneous Grouping," by Diana Oxley, details the efforts of two schools (one in Philadelphia, Pennsylvania, and one in Germany) to organize into smaller units as a means of creating more stable, intimate, and supportive contexts for teaching and learning. A key benefit to such small-unit schooling is that teachers become organized around the students themselves, instead of around parts of the curriculum. Each paper contains references. (Contains 11 figures and 6 tables.) (SLD)

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Laboratory for Student Success

Practical Approaches to Achieving Student Success in Urban Schools

Edited by Don E. Gordon and Jesse R. Shafer

Publication No. 96-2

Publication Series

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[1] Similar versions of the three articles that comprise this compendium were published (under the same titles as appear herein) in two academic journals. The first two articles appear here with permission from Corwin Press, Inc., Thousand Oaks, California; the third appears with permission from Phi Delta Kappa, Inc., Bloomington, Indiana. Their citations are as follows:

Heistad, D. J., & Reynolds, M. C. (1995). 20/20 Analysis: A citywide computer-based application. *Education and Urban Society, 27*(4), 396-410.

Wang, M. C., Oates, J., & Weishew, N. (1995). Effective school responses to student diversity in inner-city schools: A coordinated approach. *Education and Urban Society, 27*(4), 484-503.

Oxley, D. (1993). Organizing schools into smaller units: Alternatives to homogeneous grouping. *Phi Delta Kappan, 75*(7), 521-526.

Preface

Though they remain at the periphery of the daily life of most of us, America's poor have been profiled in works of such power that their plight cannot be easily ignored. Beginning in the early 1960s with the landmark publication of Michael Harrington's *The Other America*, continuing onward through the 1980s with Studs Terkel's *The Great Divide: Second Thoughts on the American Dream*, and more recently, Jonathan Kozol's bestseller *Savage Inequalities*, countless writers have asked, "Why, in the wealthiest, most developed nation on earth, are there large segments of society whose most basic life needs routinely go unmet?" As with many social issues of great magnitude, describing and analyzing the problem and its deleterious effects are relatively easy tasks. Feasible solutions, however, remain at a premium. Clearly, in this age of downsizing and cutbacks, sweeping pronouncements about inequity and the need for redistribution are unlikely to have any real impact. Instead, what are needed are genuinely creative approaches to working within a variety of constraints--financial, political, and social, to name a few. This is particularly true of America's struggle to educate its economically disadvantaged, especially those living in large urban areas.

Problems and More Problems

The reality of the situation is undeniable: Millions of children, youth, and families are beset by urgent problems, including substance abuse, limited health care, inadequate and unaffordable housing, and, of course, homelessness and persistent poverty. Perhaps the most insidious aspect of these problems is that they affect children most severely. Being poor places children at risk of educational failure, promotes low self-esteem, and often renders them unprepared to enter the workforce. By necessity, then, schools find themselves at the nexus of interconnected social problems.

Anyone who has worked extensively in schools with large concentrations of economically disadvantaged students is aware that poor, urban students present a number of unique difficulties that are likely to inhibit their academic progress. Consider absenteeism. Students who have children may frequently miss school to baby-sit if child care services are not available. Other students may need to accompany non-English-speaking parents to pay bills, meet with housing officials, or obtain services. Many others simply have to work.

Although meeting the academic needs of poor students is in itself a task of staggering proportions, poverty-related problems are far from the only obstacles with which schools must contend--especially schools located in the nation's cities, where "minority" students constitute the majority. Students in these schools present a gamut of challenges that are truly reflective of the diverse backgrounds they represent. Teachers in predominately African-American or Latino schools often must contend with the attitude that academic achievement is akin to "acting white" or "selling out." Teachers in schools with large populations of students from homes in which English is not the primary language are hard pressed to bring children "up to speed" with their English-proficient classmates--an ongoing battle against the linguistic isolation of many inner-city communities. Less dramatically, but just as damaging, other teachers confront a general feeling that success in school has nothing to do with success in later life.

Our basic understanding of the complex problems facing students and teachers in inner-city schools is hardly a recent acquisition; still, implementation of effective solutions to increasing the academic achievement of all students--particularly those children and youth who, for whatever reason, are most at risk of academic failure--has remained a difficult proposition.

The Trouble with Solutions

Though well intentioned, the educational establishment has been largely ineffective in addressing the individual needs of students in urban schools, especially those performing at the low end of the achievement continuum. Thanks in part to questionable financial incentives, schools typically have relied on various categorical programs, chiefly special education and Chapter 1, to serve students with special needs. The use (and often misuse) of these now entrenched strategies has not been unaccompanied by significant costs, financial and otherwise. Perhaps most injurious are the use of labels and the pull-out practices with which labelling is associated. The most commonly ascribed label is "learning disabled" (LD). To classify students as LD, school systems must demonstrate a measurable discrepancy between students' intelligence and actual performance. Unfortunately, it frequently takes two or more years of underperformance in the primary grades before the LD label is assigned, and in the meantime students and parents remain helpless while the seeds of frustration and failure take root. Once students are earmarked for special services, schools are placed in the odd position of being "penalized" when students do show improvement--services are canceled (though they are probably still needed) when scores reach a prescribed minimum.

While it is well beyond the scope of this preface to list the many other shortcomings inherent in the use of categorical approaches, at least three others are worth noting. First, labelled students are often treated differently. Students, teachers, and parents may adopt unwarranted lower expectations of students simply because a label has been assigned. Being labelled and subsequently pulled out of regular classes may cause children to become stigmatized and may undermine an already tenuous self-confidence. Second, there exists an alarming racial/ethnic inequity with regard to labelling: African-American students are two to three times more likely to be labelled mentally retarded, behaviorally disturbed, or LD than white students. Third, with the exception of clearly defined disabilities such as hearing or visual impairment, the distinction between who does and does not receive various categorical services, say Chapter 1 or special education, is completely arbitrary, having no etiological basis or direct implications for designing intervention strategies. Approximately 70% of students in special education are categorized as mildly learning disabled, emotionally disturbed, or mentally retarded, categories for which instructional practices and curricular structures closely resemble those commonly used in Chapter 1; in fact, there is no separate knowledge base for teaching children classified in either of these programs. This lack of distinction is particularly unsettling when one considers the financial resources expended in making what all too often amount to arbitrary classifications!

What's Needed

The unfortunate reality is that we, as educators, can in the short run do little to ameliorate the social, health, and economic problems discussed in the beginning of this preface. The need now is to focus on alterable variables, that is, on conditions and practices that can be changed in ways that enhance learning. The identification of such variables is not beyond our grasp. Indeed, a great deal of research has been conducted during the last half century on what yields better learning, and, more recently, on how to link schools with valuable community resources. Still, if judged by the practical improvements it has engendered in the schools of this nation, especially urban schools, educational research has failed. To date, with the exception of scattered pilot programs, research and practice have not been sufficiently linked; ideas, procedures, and products that are *usable* in unique educational situations have somehow evaded us.

Addressing this situation, that is, bridging the gap between the state of the art and the state of practice, is one of the primary mandates of the Mid-Atlantic Laboratory for Student Success. Thus, the editors' purpose in assembling this compendium is to highlight powerful educational tools we can use--and use now--to transform declarative research on what works into procedurally feasible practice. It is important to note that the three articles contained herein are not simply overviews of promising research, but testimonial descriptions of the power of successfully implemented innovative procedures to advance the academic achievement of students whose life circumstances place them at risk of academic failure.

In the first article, David Heistad and Maynard Reynolds present 20/20 Analysis as an alternative to prevailing practices in establishing eligibility of students for special education and related services. The authors argue that a major fault of current classification systems is that, because school districts become eligible to draw special education funds when students are placed in special education programs, financial incentives are oriented to inputs only. 20/20 Analysis, conversely, is a comparatively low-cost, *output-oriented*, noncategorical approach to identifying students in need of special services; additionally, because of its simple design, it can be easily implemented and explained to parents and policymakers.

Next, Margaret Wang, Jane Oates, and Nancy Weishew describe the successful implementation in three inner-city schools of the Learning City Program (LCP), a school restructuring model based on 20 years of research and school-based implementation experience on what is known to work in meeting the needs of the diverse populations schools in cities are increasingly charged to serve. Ever aware that the unique needs of urban students make schools a logical focal point for the coordination of community resources, LCP provides a framework for a collaborative process of uniting people and resources in initiating schoolwide restructuring efforts to ensure the academic success of *every* student.

Finally, Diana Oxley details the efforts of two schools (one in Philadelphia and one in Germany) to organize into smaller units as a means of creating more stable, intimate, and supportive contexts for teaching and learning. Oxley points out that a key benefit of small-unit schooling is that teachers become organized around the students themselves, instead of around parts of the curriculum. While citing many other benefits, Oxley also includes a caveat against allowing the formation of subschools to inadvertently segregate students on the basis of achievement or socioeconomic or racial/ethnic status.

20/20 ANALYSIS:
A Citywide Computer-Based Application

David J. Heistad and Maynard C. Reynolds

District-wide 20/20 Analyses[1] for all elementary schools (N=50) in Minneapolis Public Schools (MPS) were performed using Spring 1992 California Achievement Tests (CAT) of reading comprehension and mathematics concepts/applications. The cutoff points for the top and bottom fifths of the achievement distributions were obtained for all 50 schools. Composite results for the 50 schools were also calculated. For students who were not tested in the spring of 1992, the test scores for the preceding school year were used. For example, because fifth graders were not tested in 1992 with the CAT, their fourth-grade scores from the spring of 1991 were used for parts of the 20/20 Analysis.

Every student enrolled in MPS elementary schools in the spring of 1992 was assigned a score for reading comprehension and is included in the analyses. Special education students with moderate and severe disabilities who were not tested in the regular schoolwide program were assigned the first percentile, whereas students with mild disabilities were assigned the percentile for the most recent testing. In some cases this involved use of tests other than the CAT, but in all cases a percentile score using national norms was obtained. For some students who were not tested prior to 1992, the reading comprehension score for the spring of 1993 was used as the best estimate of performance for the 20/20 Analysis. All data were entered into the central computer system of the district; all of the findings were generated in the central office.

Percentages of students with disabilities "captured" by the cutoff for the bottom fifth were tallied by disability designation for each school. Similarly, the percentages of Chapter 1 students, students with limited English proficiency (LEP), and gifted/talented students falling within the bottom and top fifths of the distribution were calculated. 20/20 groups were contrasted on racial/ethnic status, free/reduced-cost lunch status, "resides with" codes, and gender.

Overall District Reading Achievement

The overall cutoff score for the bottom fifth of the achievement distribution for all elementary schools combined was the 11th percentile on the CAT Reading Comprehension national norms. For the top fifth, the percentile cutoff was 76. The distribution of scores for all students is presented in Figure 1. If data for Minneapolis elementary schools were exactly comparable to data for students nationally, the bars comprising the graph (Figure 1) would be flat or even. In fact, they show elevation to the low (left) side of the figure, which indicates an excess of low scores in reading for Minneapolis students as compared with national norms. On the other hand, the data show a distribution almost at national average levels near the top of the scale. It is the excess of below-average students that is most notable.

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[1] 20/20 Analysis is a simple and cost-efficient method of identifying students most in need of special help. Through the 20/20 plan, students who show the least and most progress on significant outcome variables (that is, students who place in the bottom and top fifths of a school's or district's achievement continuum on important outcomes of education, such as reading or math) receive intensive study and instruction. For an in-depth description of 20/20 Analysis, see Zetlin and MacLeod (1995) and Reynolds, Zetlin, and Wang (1993). Additionally, you may contact The Mid-Atlantic Laboratory for Student Success to request a manual for 20/20 Analysis implementation.

From Figure 2, one can see the very large differences in overall achievement levels among Minneapolis elementary schools. The cutoff for the bottom fifth ranged from the 1st percentile on national CAT norms in two schools to the 35th percentile in one school. Similarly, although not graphed here, the distribution of cutoffs for the top fifth of the Reading Comprehension distribution ranged from the 39th percentile to the 91st percentile.

Demographic breakdowns of the bottom and top fifths of the distributions were calculated. A summary of these demographic contrasts for the entire population of elementary school students is presented in Table 1.

For the total population of elementary school students, 56% received free or reduced-cost lunch. If there were no correlations with low-20% and high-20% groups, the figure would be about 56% in each group. However, as shown in Table 1, 76% of students in the low- or bottom-20% group received free or reduced-cost lunch; only 31% of students in the top-20% group were in the subsidized lunch category. Data from the table also show disproportionalities with references to percentage living with "single parents" and "students of color."

The 20/20 cutoffs were also tabulated for various categorical programs and student disability labels. Table 2 summarizes the 20/20 groups for students served in special education, Chapter 1, LEP, and Gifted/Talented programs taken from the mainframe computer codes in December 1992. Table 2 indicates the percentage of students in each 20/20 group in Grades 1 to 3 receiving services from various categorical programs. Data are for primary grades only because at the time of the study Chapter 1 funds were used only in Grades 1 to 3 in Minneapolis.

The table indicates that approximately 85% of the students in the bottom-20% group were receiving special education, Chapter 1 services, or services for LEP. One might ask, why not make it a schoolwide policy that all students falling below the 20th percentile in reading will receive intensive help? Such a procedure would make it possible to move resources now spent simply in making classification and placement decisions to instruction, to remove labels for students, and to organize "special" programs in more flexible ways.

These data give an overall picture of demographics and categorical service across the district. A key component of 20/20 Analysis is to get local school staff interested in studying students who are making less-than-adequate academic progress and, equally, to examine closely the program in which they are enrolled. Similarly, the aim is to examine the situation of high achievers. As building staff look closely at those students at the margins, they not only identify factors that the school cannot modify (such as poverty or family situation, which are correlated with achievement) but more productively focus schoolwide attention on alterable variables of instruction that have been shown to affect achievement rates. This kind of schoolwide focus, without all of the constraints associated with narrowly framed categorical services, is proposed as a promising way to improve school learning for all students. In this more open and flexible framework, certain critical variables that affect academic performance for all students, such as flexible pacing and increased time on task, may become the focus of collaborative efforts among regular teachers, specialists, parents, and administrators. It is the goal of the 20/20 Analysis to first identify individual students who most need adaptations and then to empower all individuals responsible for student achievement to focus on instructional arrangements that are promising.

Continuous-Progress Graphs by School

A key feature of 20/20 Analysis is that, when completed overall several years, one can represent the trends in achievement of students over time; looking not only at average performance for a school (for example, the median score) but also at "the margins" or at 20/20 groups. In Minneapolis, reports were compiled for each of the 50 elementary schools covering test results over three annual testing periods. Data for one school (Dowling Urban Environmental Center) are presented here as an example. During the 1990-91 school year at Dowling, a "collaborative services" model was implemented. A "collaborative teacher" was assigned to each grade level to provide services by academic need rather than by label.

The "turnover" rate at Dowling averages about 7% per year. Only students who attended the school through the entire period (from the spring of 1990 to the spring of 1992) were considered in this analysis. It was believed that the effects of school programs would be represented best by students who were, in fact, enrolled through a given period. A summary of the changes in reading achievement at Dowling for first and second grades tested on the CAT reading comprehension test in 1990 is presented in Figure 3.[2]

One can see from Figure 3 that large shifts in the reading achievement distribution were accomplished at each of the three points in the distribution. For example, in 1990 one fifth of students considered here were below the 12th national percentile in reading. By 1992, students who were enrolled continuously at Dowling showed an "above-average" 27th national percentile at their bottom fifth. Improvement was similar at the median, showing a rise from the 39th to the 58th percentiles, and from the 79th to the 89th national percentiles for students at the school's 80th percentile. This last figure shows that a full 20% of Dowling continuously enrolled students were above the 89th percentile in 1992.

A similar plot of the shift in achievement on the CAT Math Concepts/Applications domain for students tested in 1990, 1991, and 1992 is presented in Figure 4.

Again, it is not just the average (median) student or student near the bottom of the math distribution who is making gains at Dowling. The students near the top of the achievement distribution made similar gains[3]. Gains of 10 normal curve equivalents (NCEs) or more for the median and top 20% of the distribution are impressive. Slavin, Karweit, and Madden (1989) have indicated that NCE changes of one third of a standard deviation, or about 7 NCEs, could be used as a benchmark for program effectiveness (p. 28).

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[2] It should be noted that the change in the reading achievement distribution from 1990 to 1992 depicted in Figure 3 is plotted using normal curve equivalents (NCEs), an equal interval metric. Plots of percentile units tend to inflate gains near the median and underrepresent gains near the margins of the distribution. Percentile points are noted on the graph for familiar reference but should not be subtracted to compare gains at different points in the distribution.

[3] For technically sophisticated readers, the results of the 20/20 Analysis presented here are not affected by the problem "regression to the mean." The 20% and 80% cutoffs reflect the shift in the entire distributions rather than a statistic calculated from a sample of extreme scores.

These achievement results were presented to the principal and leadership team at Dowling in the fall of the 1992-93 school year. The team was very encouraged by the trends in achievement. They attributed gains in reading and math in large part to the restructuring of services for low-achieving students through the collaborative model. They also indicated that high achievers received challenging and engaging individualized interventions through advanced computer techniques, higher order thinking skills training (HOTS), and accelerated subject matter included in the urban environmental curriculum at Dowling. The leadership team also suggested certain follow-up analyses be conducted to investigate whether similar gains in achievement had been made by each of the racial/ethnic groups represented at Dowling. To conduct this analysis, data from all students enrolled at Dowling in 1990 were compared against the scores for the same students in 1992.

Figure 5 depicts the two-year Reading Comprehension trend for African-American, American Indian, and White American students who were enrolled at Dowling and tested by the CAT in 1990 and 1992. The median of the distribution for each ethnic group is plotted for both periods. For example, the median for American Indian students was at the 12th percentile in 1990; in 1992, however, it was at the 31st percentile. Data for mathematics are presented in Figure 6.

As one can see from Figures 5 and 6, all three ethnic groups demonstrated positive trends in median score for reading and math from 1990 to 1992. The gain in the median scores for African Americans was relatively less than the gain for American Indian students in reading but was quite similar in math.

It is noteworthy that in this analysis students were not separated physically by racial/ethnic groups, but it was possible to disaggregate data to show what progress was being made by various subgroups under the prevailing conditions. On receiving data as reported in Figures 5 and 6, the staff at Dowling considered some modifications that could be made in the program that could be expected to accelerate achievement gains by African-American and American Indian students. One such modification was the implementation of a mentoring program for individual African-American students. The program was made possible by a group of African-American adult males. A similar program was launched for 60 other students as well.

Services for Students in the Bottom 20%

The next step in the 20/20 Analysis focuses on the services being provided to individual students in the school. Eight different instructional interventions/categories were identified and coded for Dowling students: social work groups, HOTS, mentoring, American Indian support, gifted and talented, special education, Chapter 1, and collaborative services. Many students were receiving multiple services, whereas some students were receiving none.

The complete listing of services and 20/20 groups for math and reading were presented to the building leadership. Table 3 reports only the primary categories of special education, Chapter 1, and collaborative services. For simplification of the table, if a student was in more than one of these services, the service to the left was coded. For example, a student receiving both Chapter 1 and special education was coded "Special Education" and a student in a collaborative services group who was also labeled Chapter 1 was coded "Chapter 1." Students listed under "Collaborative" were receiving that single service. Students coded as "Noncategorical" were not receiving service from any of the three previously listed categories.

One can see from Table 3 that all (100%) of the Dowling special education students tested in 1991 were below the 20th percentile in reading, math, or both. *Thus, if a 20th percentile cutoff (math and reading) were used to offer "special" services to students, not a single student in special education at Dowling in 1991 would have been omitted.*

Outlier Schools

By using 20/20 data it became possible to identify schools that were showing exceptionally high (or low) achievement gains by students. In a sense, those who were "beating the odds" (the "outliers") on the positive side were resilient schools.

All schools in large cities face very difficult problems and challenges these days. When their students show unusual progress they deserve attention. It is possible that a school will show unusual progress only for top students or for low-achieving students. In the present study, attention was given to the median for the entire school and to 20/20 groups.

CAT data from the Spring 1992 and Spring 1994 testing periods were extracted from district computer files and total reading scores from continuously enrolled students were calculated and displayed graphically for each elementary school in Minneapolis using NCEs. The cutoff scores for the bottom and top fifths were tabulated and gain scores were calculated using simple-difference and residual-difference methods. The residual-difference scores were derived from a regression predicting 1994 total reading from 1992 total reading scores (that is, actual-predicted posttest score). A scatter plot of the simple differences between 1994 and 1992 total reading scores is presented in Figure 7. Positive outliers are circled for schools with higher-than-average achievement for the bottom fifth only, for the top fifth only, and for schools where the cutoffs for the bottom and top fifths changed in a positive direction for both 20/20 groups.

A bivariate plot of residual-difference scores isolated a single school "A" with unusual gain for the top fifth only and a single school "B" with unusual gain for the bottom fifth of the distribution. Four schools showed large gains at both margins and were clear outliers in the residual-difference analysis as well. In other words, the gains for these four schools were not simply attributable to the correlation of gain with initial achievement level where schools lowest in rank order on the initial pretest are likely to make the largest gain because of regression.

A similar analysis of continuous enrollment was conducted by the evaluation and testing division of the school district using a somewhat more sophisticated statistical technique. The reading achievement distribution was broken into quarters and the mean NCE was calculated for the top fourth, bottom fourth, and middle half of the achievement distribution. This procedure and the 20/20 Analysis produced markedly similar results. The rank order "Spearman" correlation between the mean of the top fourth and the top-20% cutoff was .68 ($p < .01$). The rank order correlation between the mean of the bottom fourth and the bottom-20% cutoff was .84 ($p < .01$).

Implications and Possible Uses of the Procedure

Clearly, centralized computer technology makes it possible to generate data of several kinds through 20/20 Analysis. The procedures are simple and low in cost. The data are easily and quickly understandable by all stakeholders in the school situation, most significantly by parents of the students. In brief form, some of the ways we foresee uses of the procedure are given below.

Allocation of students to special support services. A key recommendation of the developers of 20/20 Analysis is that schools use the procedure to decide which students should receive especially intensive instruction on basic elements of the curriculum. As shown in data for MPS Grade K-3, 85% of students in low-20% groups are already in categorical programs. Why not simply establish--as a matter of policy--that whenever a student falls into the lower fifth among classmates in rate of progress in basic skills, the parents will be notified and a conference will be held to advance ideas and plans that promise better results. No labels are involved. A simplified individualized educational plan (IEP) format has been designed that could be used in all low-20% cases. It would meet federal requirements for special education students but be simplified in several respects. It includes a brief section for recording commitments parents are willing to make to enhance the student's life circumstances in addition to the details of plans for instruction and management in school. As soon as feasible, we would propose that the commitment to collaboration with parents and to individualized planning be extended to top-20% students as well. Under the plan, parents and teachers would be permitted to refer other students (those not in 20/20 groups) for special diagnostic studies and programmatic adaptations. For example, students with hearing or vision problems might not fall into 20/20 groups but still require adapted instructional programs. Similarly, students showing extreme emotional problems might well require special accommodations even if their achievement records did not identify them for 20/20 groups.

Redeployment of school psychologists. A plan, as suggested above, would result in opportunities to redeploy psychologists from simple psychometric and classification activities and permit them to become engaged in functions more related to instructional improvements. For example, psychologists might be expected to give leadership to programs relating to uses of time (in school and/or home) and to advancing practices related to student resilience, metacognition, social behavior, and so forth.

New approaches to accountability and program evaluation. The 20/20 procedure produces data showing directly and immediately how well schools are doing in causing learning by students. Although the procedure would require careful interpretations, the data have a great deal of face validity in showing whether individual schools are having enhanced effects in the learning of their students.

New approaches to allocation of resources. Data included in this report show enormous differences among schools in the numbers of students who are lagging in their learning. There are schools among those included in the present study where 20% or more of the pupils rank at or below the 5th percentile on national norms. Clearly, changes are needed in such school situations to provide more intensive help to students whose progress is minimal. The 20/20 procedure may be especially useful in such schools through its feature of "looking at the margins" and not just at the mean or median. Recent discussions about revisions of Chapter 1 programs leading to concentrations of "special" resources in schools serving children of the poor and those showing least progress in learning are consistent with what is proposed here--using data showing what is happening at the margins of schools as a basis for allocating compensatory and remedial resources.

Disaggregation of data on school learning. Having data available in centralized computer files makes it very simple to disaggregate data for a variety of purposes. For example:

- Data can be disaggregated to show for a given school or entire district how students of various racial, ethnic, socioeconomic, or gender groups are progressing in their learning. This can be done without segregating groups of students in any way, but still showing how children of poor families or African-American students, for example, are performing in school. Data that reveal

learning outcomes can thus be used in school planning and in collaborative work with parents to work toward desired improvements.

- Data can be disaggregated to show the achievement records of pupils who are in continuous enrollment at a school compared with those who change schools frequently. Such data can be useful in evaluating programs and setting policies that influence continuity in school placements.

New approaches for funding for "special programs." In traditional categorical programs, schools receive funds that "reward" them for having many students with problems, which seems appropriate in many ways. Schools with many low achievers will need extra resources to pay for highly intensive remedial or compensatory programs. On the other hand, such a funding system produces financial disincentives for major improvements. If a school is successful in overcoming large numbers of cases of "learning disabilities," it then receives lesser amounts of special funding. Clearly, a method of funding is needed that will help to sustain successful programs, that is, a supplement to traditional funding programs. By tracking students through 20/20 Analysis over several years, as shown in Figures 3 and 4, one has a means of demonstrating that a program has upgraded the rate of learning by low achievers. Such evidence, provided easily and efficiently by computerized methods, can be used as a basis for sustaining strong programs. In Minneapolis, a district-wide task force on resource allocations is considering such a plan. Furthermore, the task force is considering an ongoing research program designed to identify the characteristics of schools that show unusual progress with students who initially show limited rates of learning. Such research may be expected to influence the kinds of data collected on schools and how they are funded. As characteristics of "resilient" schools are identified, there is also a basis for designing improved staff development and organizational efforts. A beginning stage of research designed to identify characteristics of "outlier" or "resilient" schools has been presented here.

Conclusion

20/20 Analysis is proposed as a simple and low-cost way of analyzing progress of students and of evaluating programs provided for them. With only a small amount of effort, 20/20 Analysis can be performed by computerized methods. It "looks at the margins" as well as at central tendencies in assembling data for school planning. Potentially, it can help in diminishing tendencies to classify, separate, and label students, sometimes in demeaning ways, and in creating inclusive and powerful schools that serve our increasingly diverse student population. It offers ways of observing how various subpopulations of students (by race, ethnicity, socioeconomic level, etc.) are performing in schools, but only by forming aggregates of data, not by forming special "homogeneous" groups for instruction. The procedure can be helpful in redeployment of some specialists, such as school psychologists, in ways that foster efforts for instructional improvements based on well-confirmed knowledge about human learning. It offers a way of funding schools for support of "special" programs without creating disincentives for success. Experience, so far, is that 20/20 procedures are readily understood by parents and can be the basis for increased school-home collaboration. 20/20 Analysis is designed to help educators to break out of systems that have been described as disjointed (too many narrowly framed categories) and evaluated mainly in procedural terms and to help open ways for creative approaches to instruction for *all* students.

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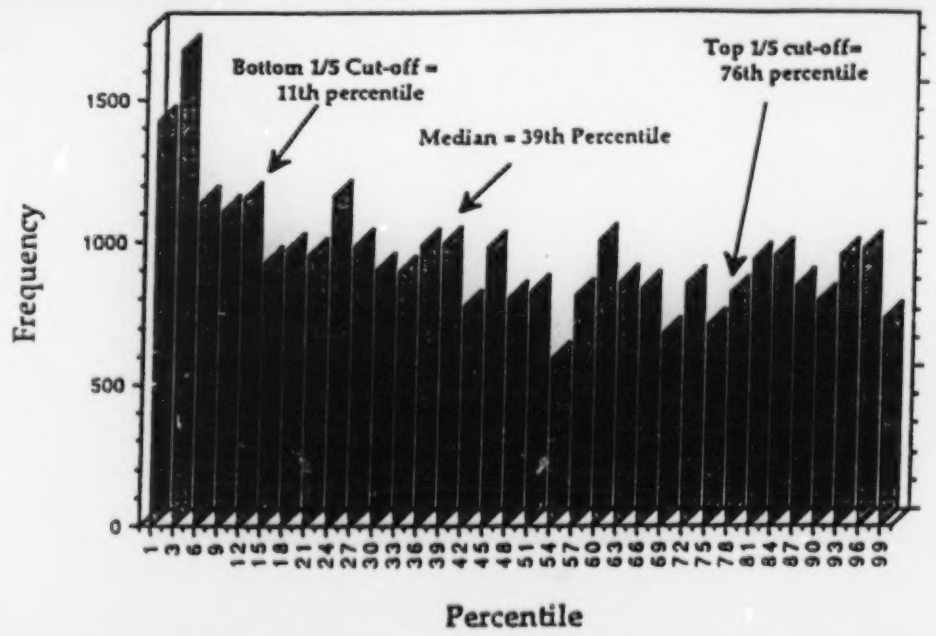

Figure 1: MPS[a] Elementary Reading Comprehension Distribution; Total Students Tested = 25,112

a. MPS = Minneapolis Public Schools.

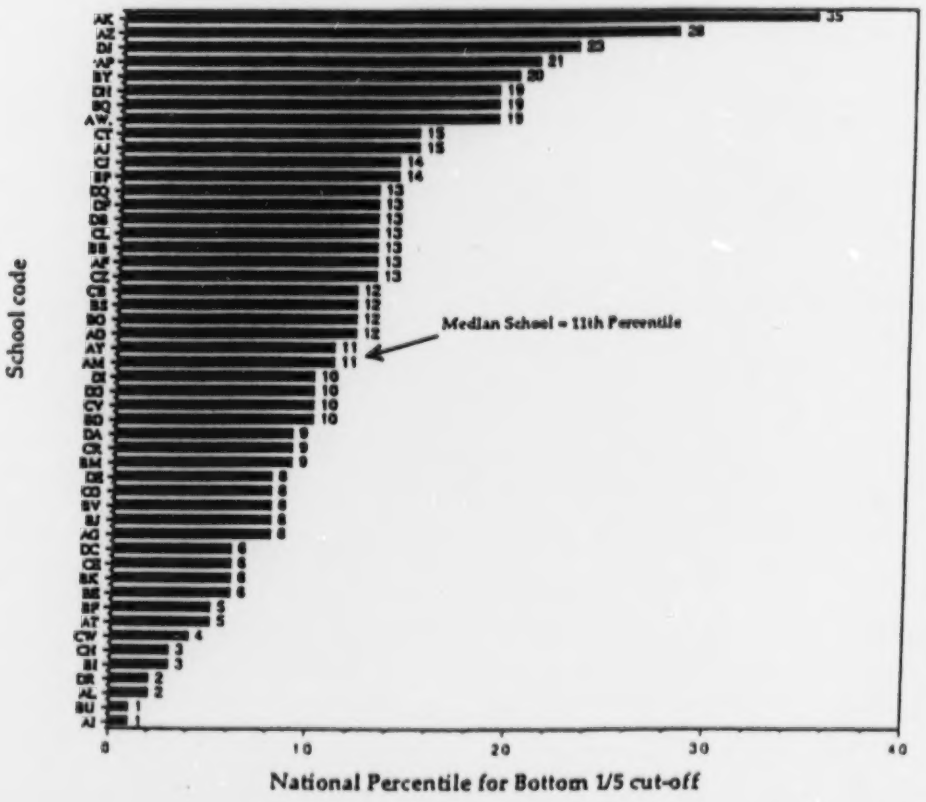

Figure 2: CAT[a] Reading Comprehension Bottom 20th Percentile Cutoff by School

a. CAT = California Achievement Test.

Table 1
Percentage of 20/20 Groups in Demographic Categories Compared with District Total Elementary Percentages

Category	Bottom 20%	Top 20%	Total Elementary
Percentage "free or reduced-cost" lunch	76	33	56
Percentage "lives with" single parent	61	31	49
Percentage "students of color"	75	30	55

Table 2
Percentage of Students in Each 20/20 Group in Grades 1 to 3 Receiving Services from Various Categorical Programs[a]

Category	Bottom 20%
Special education learning disabled	703
Special education mentally disabled	16
Special education E/BD (emotional/behavior disorders)	56
Special education speech and language	127
Special education physically disabled	12
Special education, other disabilities	9
Special education, all disabilities	923
Chapter 1	1,408
Limited English proficiency	328
Total categorical services	2,659
Total students in bottom-20% group	3,134
Percentage of bottom-20% group served	84.8

a. Special education, Chapter 1, and limited English proficiency (LEP) programs

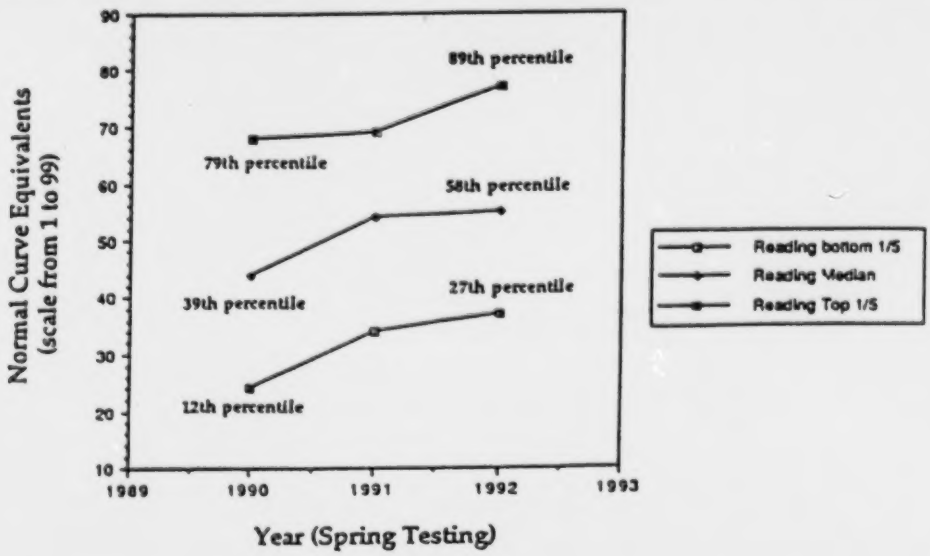

Figure 3: Dowling CAT[a] Reading Comprehension 1990-1992; Continuous Membership (N = 112)

NOTE: Plot of normal curve equivalents with national percentile change is noted.

a. CAT = California Achievement Test.

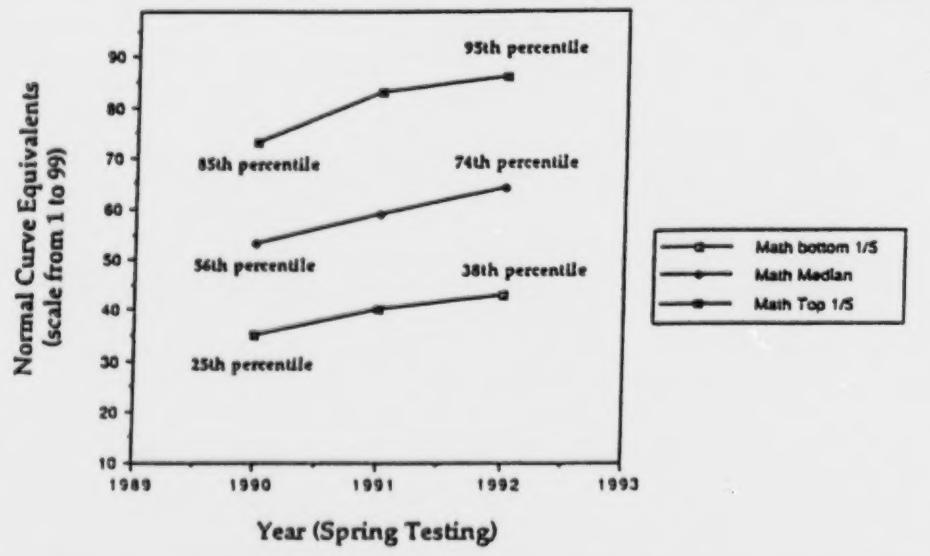

Figure 4: Dowling CAT[a] Math Concepts 1990-1992; Continuous Membership (N = 112)

NOTE: Plot of normal curve equivalents with national percentile change is noted.

a. CAT = California Achievement Test.

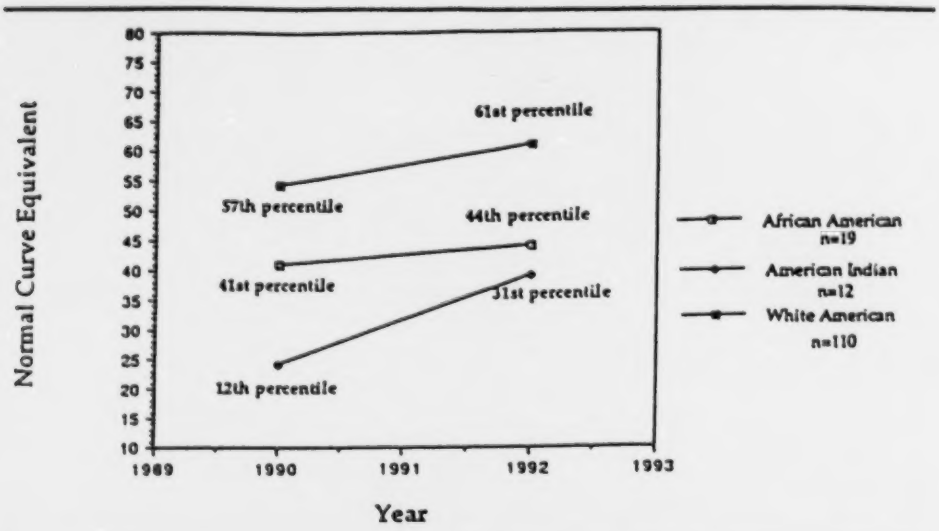

Figure 5: Dowling Gains in CAT[a] Comprehension by Racial/Ethnic Category; Continuous Membership (N = 141)

a. CAT = California Achievement Test.

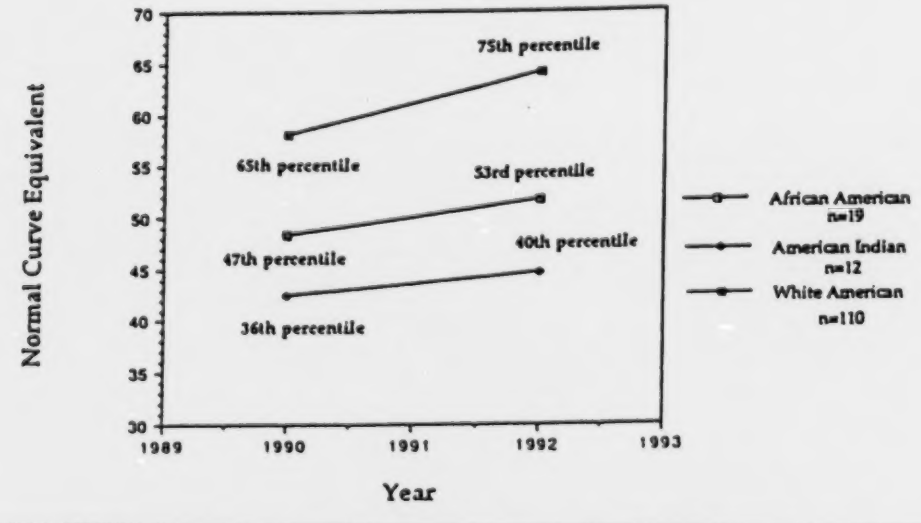

Figure 6: Dowling Gains in CAT[a] Math Concepts by Racial/Ethnic Category

a. CAT = California Achievement Test.

Table 3
Number of Students in Categorical Services by the 20th Percentile Cutoff

	Special Education	Chapter 1	Collab. Service[a]	Non-categorical	Total
Below 20th percentile reading only	6	9	5	19	39
Below 20th percentile math only	2	9	3	8	22
Below 20th percentile on both	16	19	3	2	40
Above 20th percentile on both	0	19	15	176	210
Total	24	56	26	245	311

a. Collaborative service is a locally designed categorical program for students judged to be in need of intensive instructional help. It is provided in a collaborative way, involving teachers of regular classes and of the various categorical programs.

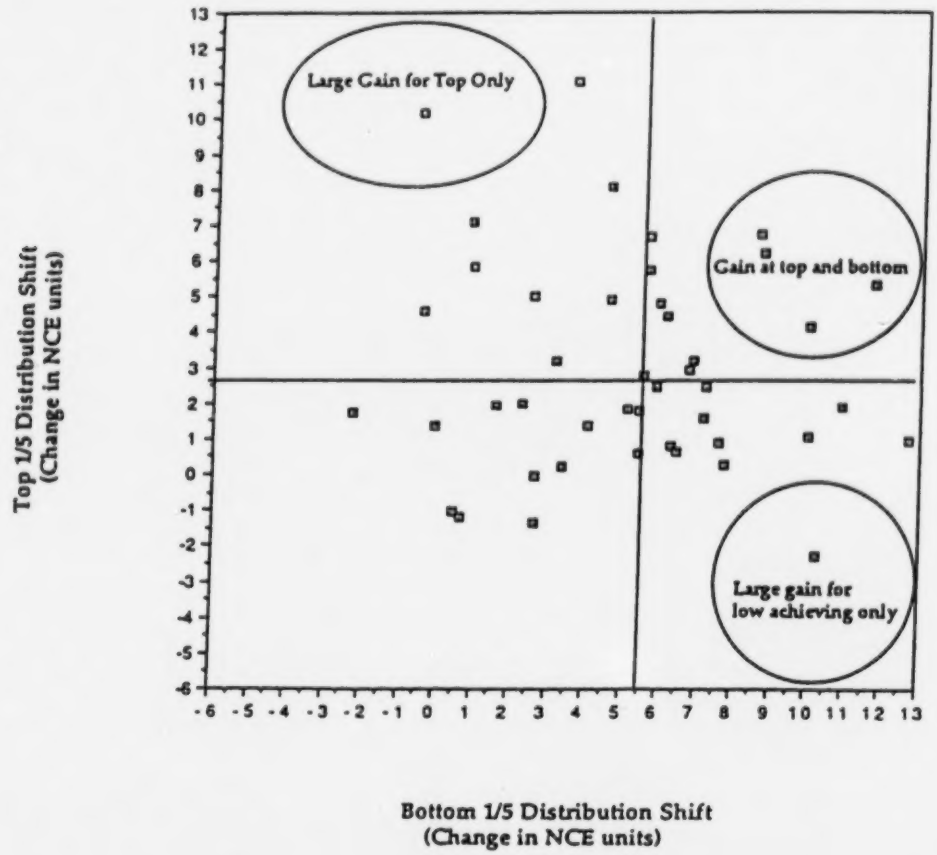
Large Gain for Top Only
Gain at top and bottom
Large gain for low achieving only
Top 1/5 Distribution Shift (Change in NCE units)
Bottom 1/5 Distribution Shift (Change in NCE units)

Figure 7: 1992-1994 CAT[a] Total Reading NCE[b] Change for Top One Fifth and Bottom One Fifth of Continuously Enrolled Students

a. CAT = California Achievement Test.
b. NCE = normal curve equivalent.

Effective School Responses to Student Diversity in Inner-City Schools: A Coordinated Approach

Margaret C. Wang, Jane Oates, and Nancy Weishew

Schools today, particularly those in this nation's inner cities, are faced with the challenge of serving an increasingly diverse student population that is academically at risk. Problems of great severity exist for many children and families; central among them are inadequate learning and low self-esteem, compounded by stressful life experiences, poor health care, and highly fragmented patterns of services. Solutions to these problems require insights and expertise drawn from many disciplines and professions, and collaboration among family, school, and community. The best information and tools for program implementation and evaluation and, more importantly, a broad-based commitment to achieve schooling success and competence of children and youth are needed to significantly improve this nation's capacity for education.

Recent advances in research and practice on what makes learning more productive, especially for students with special needs, provide clear directions on how to substantially improve conventional practice (Brandt, 1994; Committee for Economic Development, 1994; Southwest Educational Development Laboratory, 1992; Wang, Haertel, & Walberg, 1994; Wang & Reynolds, 1994). Many research-based, innovative programs/practices can be implemented in scaled-up efforts to improve the capacity of local schools to more effectively respond to the diverse learning needs of students. However, current practice in schools falls far short of the state of the art. One reason is the lack of a systematic knowledge base on how to restructure the current system of service delivery to incorporate demonstrably effective practices to achieve a high standard of schooling outcomes for every student, including those with special needs and those otherwise considered academically at risk. It is in this context, of bringing what is known to work to bear in efforts to achieve student outcomes in inner-city schools, that the Learning City Program, a school-based intervention program, was initiated.

The Learning City Program (LCP) is based on a program of research at the National Center on Education in the Inner Cities (CEIC) on what works to increase the capacity for education in this nation's inner-city schools (Wang, 1993). It is designed as a broad-based, school-family-community-linked, coordinated approach to improving student learning. A major premise of LCP is that the national standards of educational outcomes can and must be upheld for *all* students, including those "at the margins." That is, students who, for whatever reasons, are struggling in their academic programs or in their social behavior, as well as those who are learning and adjusting to school life especially well but receiving too little help, need instruction that is adapted to their individual needs. The challenge is to find ways to harness all of the resources, expertise, and energies in linking schools with other learning environments, including homes, churches, postsecondary education institutions, libraries, and private- and public-sector workplaces to support the learning of all students.

The Design of the Learning City Program

LCP was designed as a delivery framework for providing more effective school responses to student diversity to ensure student learning success, focusing on how to cull from the research base, the practical know-how, and a full spectrum of school, family, and community resources. At the core of the program's design is over 20 years of research and school-based implementation experience of two widely implemented programs, the Adaptive Learning Environments Model (Wang, 1993), the School Development Program (Comer, 1985), and CEIC's program of research on fostering educational resilience through building connections among school, family, and community (Rigsby, Reynolds, &

Wang, 1995; Wang & Gordon, 1994). A centerpiece of LCP is a framework for a collaborative process of uniting people and resources in initiating schoolwide restructuring efforts to ensure the schooling success of every student. This process strengthens schools' capacities to mobilize and redeploy community and school resources to support the implementation of comprehensive, coordinated, and inclusive approaches to effectively respond to students' diverse instructional and related service needs.

Specifically, LCP includes three major components: (a) school development, which assists schools in establishing a planning and management team and a mental health team; (b) the family-community for learning, designed to utilize the resources and energies of families and the community to support student learning; and (c) the Adaptive Learning Environments Model (ALEM), an instructional delivery system designed with an inclusive approach for meeting the diverse needs of individual students in regular classroom settings, including special education, Chapter 1, and bilingual students. A key design feature of the adaptive instruction component is a coordinated approach to service delivery that involves a restructuring of public resources and staff roles, and a shared responsibility and collaborative team approach that includes regular and special education teachers and other "specialist" professionals such as school psychologists, speech pathologists, and others. (Table 1 provides a summary list of key design features of LCP.)

The implementation of the LCP program components is supported by a delivery system that provides organizational and professional development support needs for achieving a high degree of implementation at the school and classroom levels (Wang, 1992). A basic operating principle of LCP is that there is a substantial knowledge base on variables that influence learning and on what works to foster significant improvements in student achievement. However, no single component or practice can account for these improvements. What seems crucial is the way in which successful practices are combined in an integrated system of delivery that considers the needs of the students and the site-specific strengths and constraints at the staff, resource support, policy, and administrative levels (Wang, Haertel, & Walberg, 1994). Poorly implemented versions of demonstrably successful practices are unlikely to achieve the same success. Furthermore, some practices that work well in some settings and with some students may not have the same effect as others. Nonetheless, the research base on what works provides a promising basis for formulating improvement programs that are both site specific and strategic.

Initial Implementation and Preliminary Findings: Three Case Scenarios

Initial implementation of LCP in two inner-city elementary schools and one middle school is described in this paper for illustrative purposes. The illustrative nature of the discussion is underscored by the limited database to date. LCP implementation began in two of the sites two years ago, and in one site one year ago.

During the initial implementation period, documentation of program implementation and outcomes focused on the following questions: (a) Is it feasible to achieve program implementation within the pilot year? and (b) To what extent can program outcomes be achieved after an initial program implementation year? In general, we found that it is feasible to implement the kinds of structural changes that are required in school sites that vary in demographic characteristics and resources, despite complex implementation problems and policy barriers. The data indicate that when the program is implemented to a moderate or high degree, significant positive patterns of intended program outcomes were observable at the implementation sites, even during the initial years. While some site variations were observed in the degree of program implementation and in the site-specific programmatic emphases, the findings are

quite consistent across all sites, and are reflective of the research base on effective practices and student learning outcomes.

Data on a variety of program outcomes were collected, including: degree of program implementation, patterns of family and community participation, resource redeployment and utilization, and the wide range of program impact on school operations, staff attitudes, and student learning. Discussion of program impact will focus on selected student learning outcomes.

LCP implementation seeks to impact three major areas of student outcomes: (a) improved student achievement, particularly for those at the margins of the achievement distribution; (b) patterns of active learning and teaching processes that are consistent with the research base on effective classroom practices and student behaviors; and (c) positive student perceptions about school learning environments. Two types of data were collected: students' perceptions about their classroom and school learning environments, using a survey instrument designed for this purpose (National Center on Education in the Inner Cities, 1991); and student achievement in reading and math, based on district-wide standardized test results.

Findings from the three school sites are presented as case scenarios, each at a different stage of development. First the demographic and program characteristics of the schools are briefly described, followed by discussion of preliminary findings and implications. Pseudonyms are used for the three project schools.

Harmony Elementary School

Harmony Elementary School, which serves prekindergarten through grade 5, is located in an inner-city community in Philadelphia that is plagued by poverty, inadequate medical care, and limited education and employment opportunities. Eighty-one percent of the mothers in this community are single parents, while many others are grandparents struggling to raise another generation because their own children are unable to parent. Of the 600 students enrolled in Harmony, 90% are from low-income families and 99% are African American. Six percent are labelled special education. Implementation of LCP began in 1992-93 under the leadership of the then newly appointed principal.

In contrast to the decrepit physical appearance of the surrounding community, the hallways of Harmony are bright, clean, and dotted with student work and inspirational messages. There are few discipline problems, and a feeling of respect suffuses the school. Harmony's stability is evidenced by its average daily attendance of 91% and its 6% mobility rate. Likewise, 75% of the teachers have been at Harmony longer than 3 years.

Harmony's staff encourage visits by parents and community members. Parents and caregivers actively participate in family involvement activities and help develop ideas to strengthen connections between the school, family, and community. The school planning team enlists many parents to work with staff on a wide variety of parent involvement activities, including assisting in classroom activities, tutoring students, and sponsoring of parent/child dinner events, thereby strengthening the kinship bonds among students and families. Efforts to elicit parental input and to keep them informed of their children's educational progress have been viewed by the school staff as a major accomplishment and success. During the 1993-94 school year, for example, over 500 parents attended each of the two parent/caregiver conferences, a participation rate over 80%. Special events, such as programs on African-American heritage, are generally organized with parents in leadership roles.

Other LCP-related initiatives at Harmony include two pre-K classes, established during the second year of LCP implementation. The pre-K classes were initiated in response to the many kindergarten students lacking pre-K experience. The primary goal of the classes is to provide preschool experiences for students who did not qualify (or for whom space was unavailable) for Head Start or any other type of preschool program. This program focuses on social and academic skills that enhance readiness for formal schooling. Also, under the auspices of LCP the school has initiated several programs to address community literacy needs. Classes in Adult Basic Education (ABE) and General Equivalency Diploma (GED) preparation are offered, as well as a six-credit course taught at a local junior college on tutoring reading. Supported by foundation grants, parents who are serving as tutors attend class six hours each week and tutor for six hours in classrooms.

In terms of organization, Harmony employs the principles of site-based management and shared decision making, which also extend beyond the school to the active involvement of the community. Strategic planning ensures a wide representation of the school staff and parents. Saturday planning meetings at neighborhood churches, for example, have kindled a spirit of partnership between the school staff and the community. Emerging from one of the Saturday planning meetings was a mission statement and a set of goals that put student achievement first. The shared responsibility for the attainment of these goals sets the climate for a school focused on achieving educational excellence.

Implementation of LCP is viewed as an evolving program development, implementation, and evaluation effort, spearheaded by a leadership team that includes principal, staff, and parents. A specified budget for Chapter 1 schoolwide projects was earmarked for staff planning and related staff development activities. Staff development/planning sessions are organized schoolwide by grade or by implementation needs. The school staff devote much staff development time to ways to advance instruction and to adapt to individual student needs.

Preliminary Findings on Student Outcomes

Student outcome data were collected for Harmony and two comparison schools. The comparison schools are feeder elementary schools of the same middle school that serves the Harmony community. The schools are comparable in demographics and size. Two types of outcome measures were used in the comparison analysis: students' perceptions about their schools and student achievement.

Students' perceptions about their classroom/school environment. Figure 1 shows the findings from a comparative analysis of responses from a survey on students' perceptions of their class/school environment. The survey was administered to a sample of students from Harmony and the two comparison schools. Multivariate Analysis of Variance (MANOVA) results show significant overall effects. As shown in Figure 1, there is a general pattern of more positive perceptions about their classes/schools among Harmony students, compared to students from the two comparison schools.[1] Harmony students showed more positive perceptions on 5 of the 15 subscales. They perceive better and

[1] A mean score close to the value of four for each scale (or a mean score close to the value of five on the achievement motivation scale, which is made up of five items) indicated that students perceive a particular variable category as prevalent. That is, their ratings indicate they are in strong agreement with the items (descriptors) included in that particular variable category. A mean score close to zero indicates that students perceive a particular variable category as not prevalent; that is, their ratings indicate they disagree with the descriptors included in that particular variable category.

more constructive feedback from teachers about their work and behaviors, a higher level of aspiration for academic learning, better academic self-concept, and clearer rules for behaviors and class/school operations. However, students' ratings on perception of affiliation and teacher support are lower than those of students in the comparison schools.

Student achievement. Mean NCE scores for reading and math across three years are shown in Figure 2, which indicates a pattern of steady improvement since program implementation in 1992-93. Although the mean NCE scores for reading and math for the baseline year (1992) for Harmony Elementary School were slightly lower than those of the comparison schools, Harmony students showed a positive pattern of change that outperformed the students in the comparison schools.

Because not all classes in Harmony have initiated program implementation of the ALEM component--which focuses on using adaptive strategies to meet the learning needs of individual students in regular classes--it is of interest to examine the impact of ALEM on student achievement. One teacher at each grade level (33% of the teachers at Harmony) has implemented the ALEM component during the two LCP implementation years. About 50% of the special education students in Harmony school were placed in ALEM classes on a full-time basis.[2]

Table 2 shows the proportion of students in ALEM classes versus non-ALEM classes who scored in the bottom and top 20% in 1993 and 1994 in reading and math achievement. The ratio indicated in the table represents the *actual* over the *expected* number of those in each group; a proportion over one indicates a greater number than expected, under one a smaller number than expected, falling into each group. As can be seen, fewer ALEM students than expected scored in the bottom 20% for reading and math, and more students than expected scored in the top 20% in both years. In the latter, more students than expected scored in the bottom 20% of the achievement distribution for the school, and fewer than expected scored in the top 20%. Further, a pattern of greater positive change was observed between the 1993 and 1994 scores, contrasting with students in non-ALEM classes. These findings on the patterns of progress made by students who scored at the bottom and top 20% of the achievement distribution were most encouraging, given LCP's goal of schooling success for every student.

Plans are under way to expand the ALEM component at Harmony. These positive overall patterns of achievement throughout the school can be anticipated to continue; the learning program for all students, particularly those at the margins of the achievement distribution, should continue to improve as other Harmony teachers begin to implement the ALEM component in their classes.

Energy Elementary School

Energy Elementary School is a unique small K-6 school (the smallest school in the Houston Independent School District), surrounded by crowded apartments and boarded-up homes. Unemployment, poverty, transient families, and a number of modern morbidities afflict the community served by Energy. Of its 275 students, 89% come from economically disadvantaged families. Seventy-four percent are

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[2] No special education students were placed in classes where ALEM was not replicated. Special education students not placed in ALEM are in segregated special education classes. The regular education students were randomly assigned to classes at Harmony. However, the principal also indicated that she had in some instances placed some of the "difficult" low-achieving students in ALEM classes because of the adaptive instructional approach being implemented.

Latino. Thirty-eight percent are identified by the school district as limited English proficient (LEP). Its small student body, although generally viewed as a positive element, has serious drawbacks. Many of the resources available to larger schools are absent at Energy. For example, Energy staff are asked to work with the nearly half of the student body that requires bilingual education or English for Speakers of Other Languages (ESOL) instruction, but they lack the support of ESOL staff or other resource support available in larger schools.

The serious challenges faced by Energy require extraordinary dedication on the part of the staff as well as high community support. A 58% student mobility rate and a 28% teacher turnover rate mandates flexibility. Mixed-grade organization is often necessary to accommodate overcrowding, language needs, or occasional gross discrepancies in class size due to high mobility. The built-in flexibility in the LCP design provides a framework conducive to teaming, heterogenous grouping, and cross-grade articulation.

Staff development has been a key in making important changes in the school's organization and instructional delivery at Energy. To guarantee the time needed for staff development, staff--with the cooperation of the community--agreed to a system of "banking," in which 15 minutes was added to the beginning and end of each day allowing for early dismissal one day per week. This two-hour block of time has afforded teachers the opportunity to engage in cross-grade articulation, focusing particularly on curricular and programmatic issues and on sharing instructional strategies and techniques.

Through LCP, parents have also become actively involved as decision makers. Using Chapter 1 funds, seven parents have been hired as parent scholars, and many more have volunteered to provide assistance at the school. These volunteers work directly with classroom teachers before, during, and after school to improve instruction and provide enrichment activities. In a program with a local high school, 11th- and 12th-grade students work in classrooms each week tutoring younger students. The school has also initiated the Say Yes program which presents monthly parent workshops to address social and academic needs and concerns. These sessions, held on Saturdays, have been well attended by community members.

As part of a health initiative, the school planning team was able to arrange for monthly visits from the local hospital's van. Medical teams provide immunization, checkups, and follow-up care to children and families. The hospital staff also work closely with school staff to provide workshops, pamphlets, and general information to the community on health-related topics.

Although the school is still in the initial implementation phase, much has been accomplished during Energy's first year of LCP implementation through redeploying existing resources and creating new avenues to schoolwide improvement. The initial success has generated much confidence and energy among the school staff and the Energy community about what they can do to bring positive changes to their school.

Students' Perceptions about Their Classroom/School Environment

Not all teachers participated in the first-year implementation of LCP (9 out of the 12 regular teachers and selected specialist teachers). Those who did not provided a natural comparison group for analysis. Figure 3 shows the results from the comparison analysis of the student survey data from program and nonprogram classes. Overall, a significantly more positive perception about their schools was reflected by the ratings of students in the program classes, as indicated by MANOVA results across

the 15 scales. Results from subsequent ANOVA of the individual schools indicate that students in the program classes showed significantly more positive ratings than the comparison classes in their perceptions of satisfaction about their instructional/learning environments and in their perceptions of pacing practices and teacher expectations. In addition, they perceived greater involvement in their classroom environment and increased teacher support and classroom order. However, their ratings on sense of affiliation were lower than those of the nonprogram group.

Student Achievement

After only one year of program implementation, a positive pattern of student achievement was observed. Program students outperformed nonprogram students on both reading (NCE scores: 41 versus 32) and math (NCE scores: 46 versus 34). Because only a small percentage of the students' achievement scores on a citywide test were available (students in bilingual classes did not take the test), these findings must be interpreted cautiously.

Sunrise Middle School

Sunrise Middle School is a Chapter 1 schoolwide project school situated in an area of Philadelphia dotted with abandoned factories and rundown houses. Physically, the school's graffitied structure is seemingly isolated from the modern world. The school is surrounded by drug gang territory; students literally cross "war zones" to get to their school. With 60% of the children in the community born to unwed mothers and 93% growing up in low-income families, Sunrise is faced with social ills of many types and in many languages. Overall, the school has been characterized as the most turbulent middle school in the school district (Mezzacappa, 1994). Seventy-eight percent of the 970 students are Latino. The student turnover rate is 35%. Of the teaching staff, 38% are in their first three years in the School District of Philadelphia.

Structurally, Sunrise is organized into three houses. Students are placed randomly in one of the three vertically organized house structures, located on different building floors. Within each house, teaching teams have common weekly preparatory time to facilitate cross-curricular planning and problem solving. The Red House has initiated all three components of LCP. In the Red House, special education students are integrated in regular classes on a full-time basis. Special education and bilingual education students are in segregated, self-contained classes in the other houses. Of the total student population at Sunrise for the 1993-94 academic year, 21% are in special education and 22% in LEP. In 1992-93, the Red House included 23% special education and 34% LEP students enrolled at Sunrise.

Initial implementation of LCP began during the 1992-93 school year. The entire school is involved in the school development and family-community connection components, and all houses participate in weekly school planning and management team meetings as well as mental health and parent and community programs. In addition to the establishment of a comprehensive health clinic, in collaboration with the local children's hospital and the Philadelphia Department of Health and Human Services, a variety of community outreach and family involvement projects have been initiated in an effort to alter the school's climate. With well over a thousand suspensions in each of the last two years, working with families to change behavior remains a priority. A pattern of increased attendance was observed during the initial two years of LCP implementation. The student attendance rate was 75% in 1992-93 and 79% in 1993-94. By contrast, the attendance rate for the Red House was 85% in 1992-93 and 86% in 1993-94.

Staff development has taken precedence during these initial stages to allow time for acquiring new information, discussion, and feedback on implementation. Teachers working in teaching teams have sought individual as well as group solutions to the problems of low achievement, violence, and parental despair. The school staff use regularly scheduled meeting time to address implementation issues, plan schoolwide projects, and support after-school workshops. An on-site graduate-level course on instructional teaming strategies offered by CEIC staff provided an added opportunity for school staff to design collaborative structures and receive feedback on their implementation.

Several innovative projects have recently been initiated to increase parent involvement in school activities at Sunrise, including biweekly parent workshops on a variety of topics of concern to parents and the community; extension services by neighborhood agencies that provide family counseling, adult education, and job training; and social outings that include both parents and children, ranging from hayrides to museum trips to sporting events. In addition, several strategies were developed in collaboration with the city's library system to encourage children and families to read. For example, acquiring a library card became easier, a book return system was established in the school, and the school became involved in the planning and support of local library activities and events.

Students' Perceptions of Their Classroom/School Environment

Because of the unique demographics of Sunrise, no comparison middle school could be identified. However, since not all of the houses at Sunrise participated in program implementation during the two initial LCP implementation years, program versus nonprogram comparisons were carried out to determine program impact. Figure 4 presents the results.

As shown in Figure 4, MANOVA revealed significant differences in the students' overall perceptions of their classroom/school learning environments. Students in the Red House showed more positive perceptions on 9 of the 11 subscales. (The survey instrument used for middle school is slightly different than the elementary survey because of the difference in the school's organizational structure, that is, the vertical house system.) Students felt that their instructional/learning environments were more multicultural, social, active, nontraditional, and interdisciplinary. According to the students, classroom environments offered more affiliation, guidance, teacher support, and participation. In addition, they indicated a higher rate of constructive feedback, higher student aspirations, more positive self-concepts, and a clearer sense of the rules governing class and school learning environments.

Student Achievement

Overall, the mean reading and math achievement scores of the students in the Red House were found to be slightly higher (although not statistically significant) than the mean scores of the rest of the school. It is of interest to note the program's positive impact on students in the bottom and top 20% of the achievement distribution. For both program implementation years, as shown in Table 3, less than 20% of students in the Red House scored in the bottom 20% of the achievement distribution of Sunrise in reading and math. This compares favorably with data for students in the remainder of the school, even though special education and bilingual education students were included in regular classes in the Red House (their scores were included in the analysis) and no special education or bilingual students were included in regular classes elsewhere in the school. Furthermore, in the Red House a greater proportion of students than expected scored at the top 20% of the achievement distribution of Sunrise in both reading and math, compared with students not in the Red House.

Conclusion

The advances in theory and research on individual differences in learning and effective schooling practice have had very little impact on how schools respond to student diversity. Many students have difficulty achieving learning success and need better help than they are now receiving. If all students are to successfully complete a basic education through equal access to a common curriculum, the way in which schools respond to the diversity of student needs must undergo major conceptual and structural changes. Improvement efforts must take into consideration the learning context and require collaboration and coordination among professionals on a scale never previously attempted. Program implementation must be a shared responsibility of all stakeholder groups at the grassroots level to address the multiple, co-occurring "risks" prevalent in the lives and learning of many inner-city children, who are placed further at risk because of the inadequate education they receive. The work of the Learning City Program represents one attempt to find ways to reduce the co-occurring risks that surround many inner-city children and families. Our preliminary findings suggest the feasibility and potential for significant improvements.

Linking school efforts to achieve significant improvements in student learning--efforts that focus on the well-being and educational success of children and youth who live in the most adverse life circumstances--is central to LCP's concept and implementation. Although quite impressive advances have been achieved in a relatively short period by the three case study schools, much attention must be paid during the next phase of implementation to charting a course of action that will bring to scale what works in the unique situations of these three schools. As have many other comprehensive, systemic school reform efforts, all three schools implementing LCP faced pervasive, passive resistance tied to old habits and policy barriers at all levels. The structural and attitudinal changes required for instituting changes that transcend single professional field and agency auspices cannot occur without rooted connections with family and community.

A variety of innovative programs have emerged across the country, emphasizing coherent and seamless child and family services that seek to improve education and life circumstances of children and youth placed at risk. These programs range from local, grassroots community efforts to state- and federal-level initiatives that seek to transform fragmented, inefficient systems of service delivery into a network of coordinated partnerships that cross programmatic and agency lines. However, despite unprecedented national attention and a myriad of programmatic initiatives at all levels, solid information is glaringly lacking on ways to bring what is known to work to bear in addressing the problem of inadequate learning among children and youth. This lack only compounds the difficulties for children, youth, and families living in inner-city communities and faced with a litany of modern morbidities.

Few educational reforms have generated the same level of ground-swelling support as the comprehensive approach to coordinated educational and related services for children as a key school improvement agenda. The ultimate goal, one that LCP espouses, is to foster development and educational resilience and to promote the learning success of children and youth requiring greater-than-usual educational and related service supports. Of course, schools must remain the primary focus in efforts to find ways to improve this nation's capacity for education; for surely other efforts will come to naught if we fail to offer powerful forms of education in our schools. However, educational reforms of the 1990s that aim to address the deepening problems faced by children and families in a variety of at-risk circumstances in this nation's inner cities must provide a broad-based coherent approach including family, school, and other community resources.

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Table 1

Key Design Features of the Learning City Program

- A site-specific implementation plan that takes into account the school's improvement needs, the learning characteristics of the students, staff expertise and staffing patterns, the curricula, and other implementation resources.
- A school-wide organizational support system and teaming process that involves regular and specialist teachers in the planning and delivery of instruction in regular classroom settings.
- A data-based staff development program. A training sequence for school personnel begins prior to program implementation and continues through the school year, based on the needs of the individual staff.
- An instructional learning management system that focuses on the development of student self-responsibility for behavior and learning progress.
- An integrated diagnostic-prescriptive process that provides a learning plan individually designed for each student. The process includes the use of whole class and small group instruction, as well as one-on-one tutoring, based on an ongoing analysis of student needs, resource availability, and instructional expediency.
- An adaptive approach to family and community involvement. LCP encourages an active program of family involvement to increase communication and cooperation between home and school and to facilitate establishment of a shared partnership approach to improving educational outcomes of every student.
- A school-linked human and health services component that fosters the forging of community partnerships to support individual student learning.

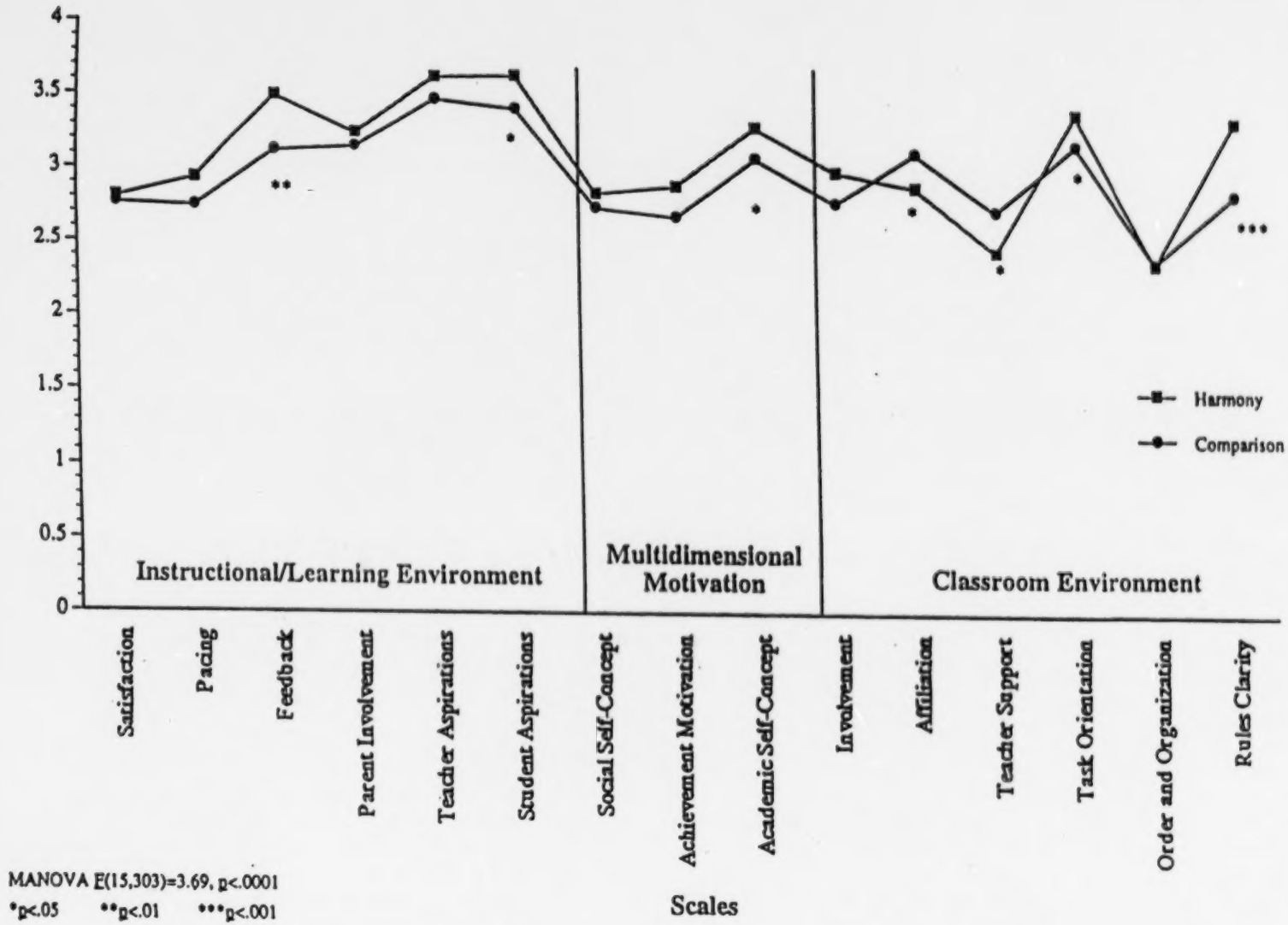
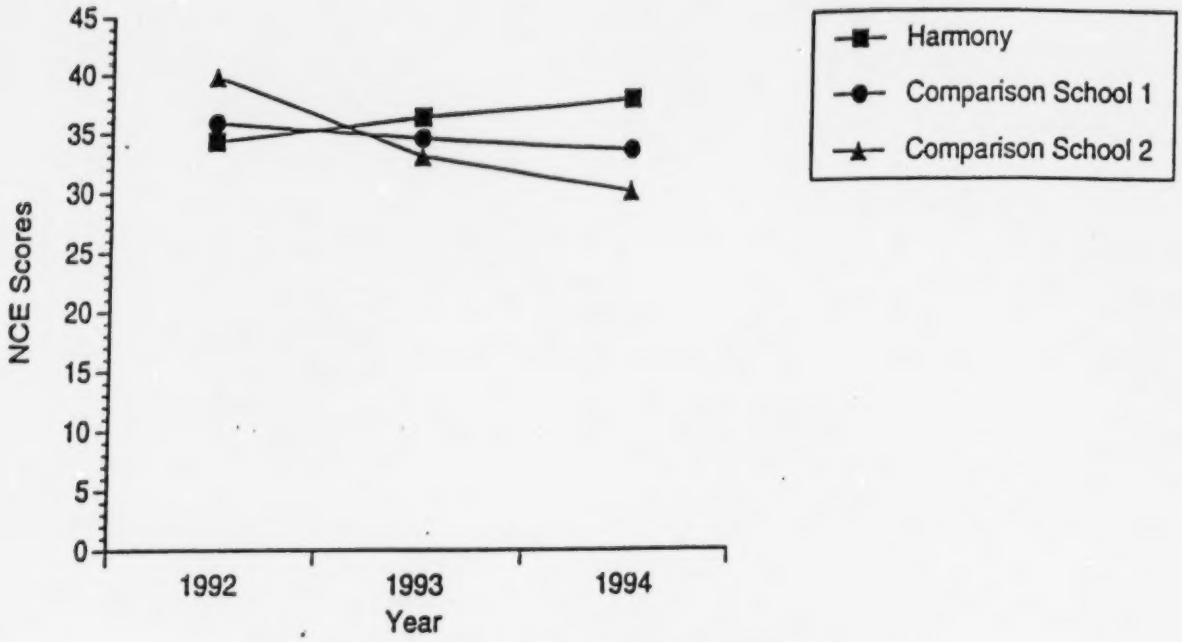


Figure 1. 1993 Students' Perceptions About Their Classroom Learning Environments
Harmony Elementary School



Comparison of Mean Reading NCE Scores Between Harmony and Comparison Schools from 1992 to 1994

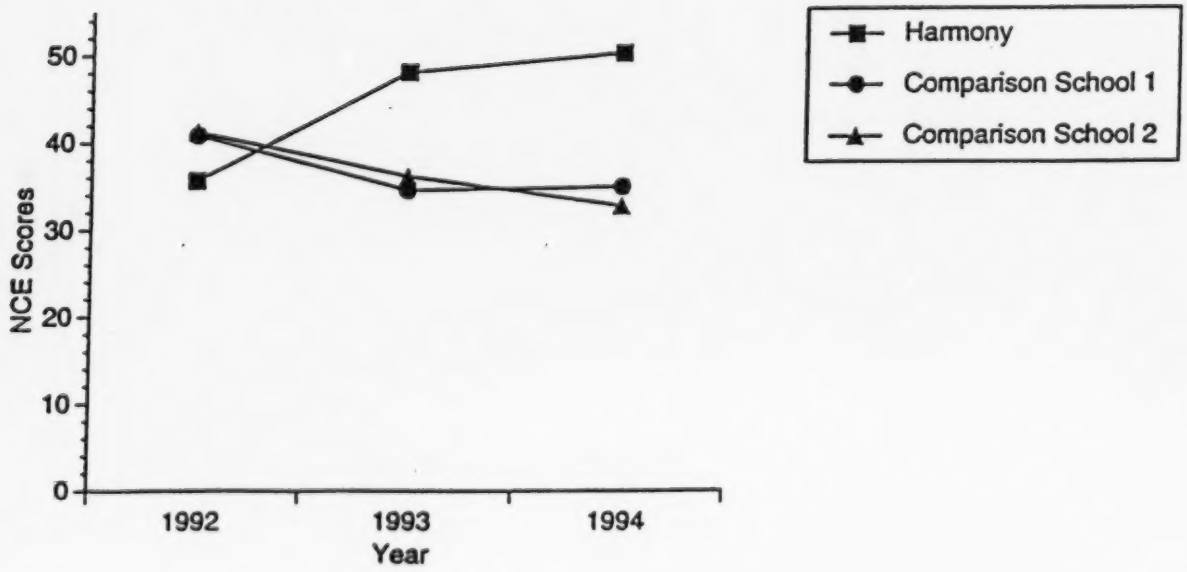


Figure 2. Comparison of Mean Math NCE Scores Between Harmony and Comparison Schools from 1992 to 1994

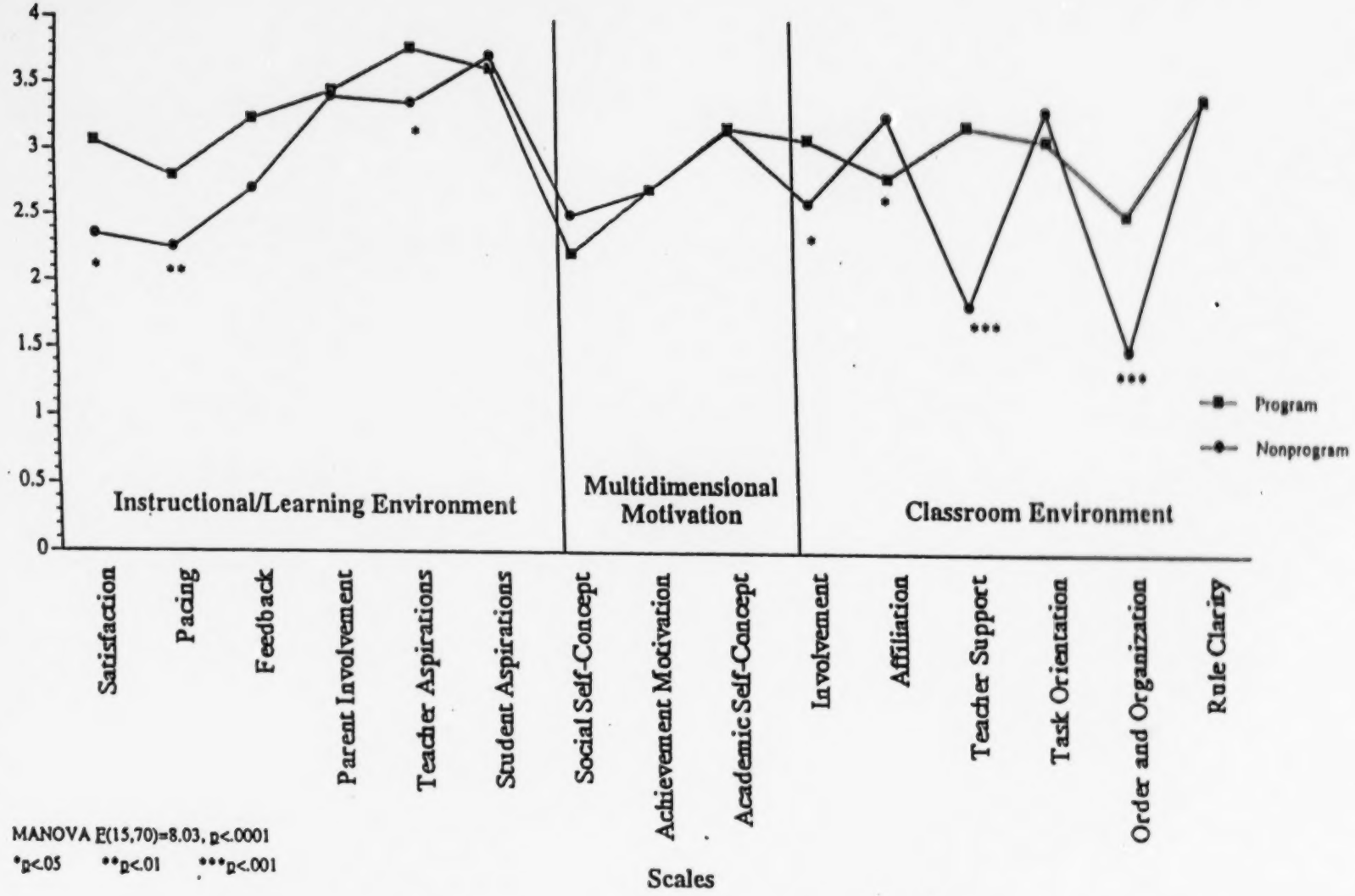
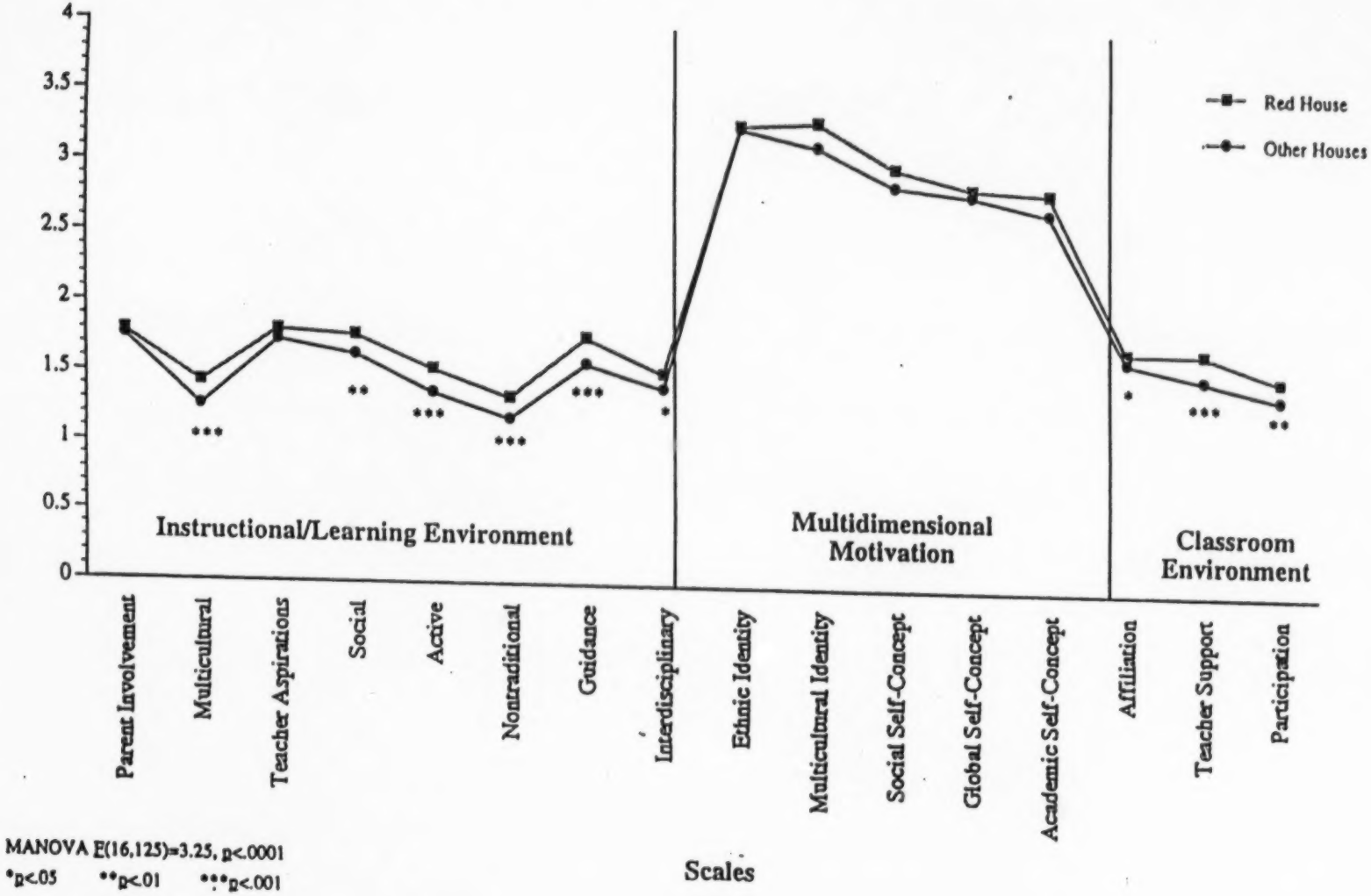


Figure 3. 1994 Students' Perceptions About Their Classroom Learning Environments Energy Elementary School



MANOVA F(16,125)=3.25, p<.0001
*p<.05 **p<.01 ***p<.001

Figure 4. 1994 Students' Perceptions About Their Classroom Learning Environments Sunrise Middle School

Table 2

Proportion of Students in Top and Bottom 20% (Actual/Expected) Harmony Elementary School

Subject	1993				1994			
	Bottom 20%		Top 20%		Bottom 20%		Top 20%	
	Har.	Comp.	Har.	Comp.	Har.	Comp.	Har.	Comp.
Reading	1.11	.96	1.32	.89	.76	1.06	1.40	.84
Math	.22	1.27	1.48	.78	.04	1.32	1.77	.70

"Har." = Harmony Elementary School; "Comp." = Comparison School

Table 3

Proportion of Students in Top and Bottom 20% (Actual/Expected) Sunrise Middle School

Subject	1993				1994			
	Bottom 20%		Top 20%		Bottom 20%		Top 20%	
	RH	Rest	RH	Rest	RH	Rest	RH	Rest
Reading	.92	1.06	1.44	.78	.94	1.25	1.20	.82
Math	.79	1.06	1.05	.94	.73	1.19	1.37	.92

"RH" = Red House; "Rest" = Rest of School

Organizing Schools into Smaller Units: The Case for Educational Equity[1]

Diana Oxley

The national reports on education that appeared in the 1980s created a virtual tidal wave of interest in organizing middle and high schools into smaller units. Nearly every prominent analysis of secondary schools touted schools-within-schools and house systems as means of addressing key educational problems such as students' lack of engagement, a fragmented curriculum, and weak teacher collegiality (Carnegie Foundation for the Advancement of Teaching, 1988; Committee for Economic Development, 1982; Goodlad, 1984; National Coalition of Advocates for Students, 1985)[2]. In response, house systems have been mandated in school districts across the country, as have similar strategies for creating charter schools or schools of choice within a single school building. New York City, Rochester, New York, and Columbus, Ohio have adopted house systems at the high school level; Philadelphia has embraced a charter school plan for all 22 of its comprehensive high schools; Los Angeles and Philadelphia have implemented small units at the middle school level; and Chicago is pursuing the concept at all levels of schooling.

Indeed, smaller educational units appear to have many advantages over large schools. Small units create a more stable, intimate, and thereby supportive context for teaching and learning. Small units organize teachers around students instead of parts of the curriculum. Further, they encourage a coherent program of study, and assign particular teachers collective responsibility for their students' success. Finally, small units provide a basis for a decentralized system of school management in which classroom teachers have greater authority and flexibility while parents have readier access to teachers.

But despite the enormous potential of small-unit organization to help all students reach high levels of academic achievement, it carries a risk. If educators allow subschools to segregate students of differing achievement levels and socioeconomic backgrounds, as academic tracks and special-needs programs currently do, the subschool concept will fail to realize its full potential. My purpose here is to demonstrate the advantages of small-unit organization over large schools for all students, particularly low-achieving students, and to describe an approach to small-unit organization that provides alternatives to student sorting and homogeneous grouping practices. Since this approach challenges deeply rooted educational methods, I also discuss some of the ways that educators have overcome professional and political obstacles to reform.

ADVANTAGES OF SMALL-SCALE SCHOOLING

Large schools appear to have some economic advantages (perhaps only because cost-benefit analyses fail to reckon the costs of underachievement, dropout, and vandalism with which large schools are associated), but they are primarily a tool of curriculum specialization. Over the last several decades, as economic demands for higher skilled workers grew, fewer and fewer students left school early to take

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[2] For an extensive list of resource citations on small-unit restructuring, see Appendix A.

jobs. Educators responded by diversifying the curriculum and encouraging growth in school size, since a large school population is needed to support a large number of specialized courses. A broader array of courses was offered, and students were steered into different academic tracks in an effort to match their varied interests and abilities with different curricula (Cohen, 1985).

Educators altered the curriculum rather than the way they taught it on the assumption that students have different aptitudes for learning and thus require different levels of material. Now economic pressures, revised theories of learning and intelligence, and the poor results of specialized courses and programs have severely challenged these assumptions (Gardner, 1985). The present secondary school curriculum is out of step with current economic demands for both a greater mastery of basic skills and higher order thinking skills. "Less is more" proponents have succeeded to a large degree in focusing curriculum reform efforts on intensifying instruction of basic subjects (Sizer, 1985). Research indicates, in particular, that academic tracking is neither an effective nor equitable method of organizing instruction (Oakes, 1985). Remedial courses tend to put students farther and farther behind until, eventually, they drop out (Grannis, 1991). Special-needs programs like Chapter 1 have also shown little benefit (Commission on Chapter 1, 1992; Wang, Reynolds, & Walberg, 1988).

By contrast, small-unit organization supports a more coordinated and concentrated approach to instruction. Small units complement academic departments in that they provide a vehicle for cross-disciplinary collaboration. Within a unit, teachers share a group of students in common rather than a discipline. They are able to work together to unify instruction and allow students the opportunity to exercise skills and knowledge across subject, for example, utilize math skills in a science class. Further, each subunit must employ a core curriculum that is common to all its students, since its small scale cannot support diversified curricular offerings, academic tracks, and remedial programs. A shared learning experience is one of the most important ingredients of a cohesive learning community.

The idea of organizing schools into smaller units is certainly not new--as far back as the 1960s educators were intrigued with the notion. But this early interest amounted only to a brief flirtation--partly because it opposed curriculum expansion. The aim of the house systems established in the sixties and seventies was to reinstitute schooling on a human scale. But educators were simply unable to establish houses in an educational culture dominated by curriculum options and academic department structure. Few house systems survived to the present, even where schools were architecturally designed to accommodate them. But now that academic tracks and myriad course offerings have been recognized as more of a problem than a solution, educators may have greater success in creating intimate and supportive learning contexts.

Today, the alienating effect of large schools is perhaps more profound than ever. Schools in the United States, urban as well as rural, are enormous: high schools regularly enroll 2,000 to 3,000 students. Even U.S. elementary schools, which average close to 400 students, are about twice as large as those of other industrialized countries. Yet secondary schools of more than 500-600 and elementary schools of greater than 300 are difficult to defend on educational grounds (Goodlad, 1984). A sizable body of research indicates that large school size adversely affects attendance, school climate, and student involvement in school activities, while contributing to higher dropout rates, vandalism, and violence (Garbarino, 1978; Lindsay, 1982; Pittman & Haughwout, 1987). Further, the social and psychological support formerly provided by families and communities appears to have declined across all income groups, especially among the urban poor, suggesting that today's students may be even less able to cope with large schools.

Small-unit organization, on the other hand, allows teachers and students in large schools to form bonds of familiarity, identification, and support. In small units, comparatively small numbers of students and teachers interact with one another; these groups are stable across years, and the range of activities they share is expanded. Under these conditions, students and teachers are more likely to get to know one another, to respect and support each other.

Small-unit organization also has the potential to bring about significant changes in the traditional shape of school governance. Small units lend themselves to a decentralized system in which unit leaders assume authority to orchestrate unit activities. Unit leaders are better positioned than centralized administrators for two-way communication with teachers, students, and their parents, and at the same time not so burdened by administrative work that they are unable to teach any classes. The tension between administrators and instructors that normally exists in large schools with centralized management is less likely to develop.

At a time when traditional school management structures have come under strong attack, and school reforms such as school-based management and broadened input into decision-making have become the watchwords of the reform movement, the small-unit plan defines an alternative organizational structure that supports such reforms. Here again, the research on school size bolsters the claims: it suggests that one way in which large schools produce negative student outcomes is through their adverse effect on school management, particularly on consensus-building and staff involvement in decision-making (Bryk, Lee, & Smith, 1990; Crain & Strauss, 1986).

LOOKING OUT FOR EDUCATIONAL EQUITY

This conjunction of trends in reforms across interrelated dimensions of schooling would bode well for small-unit plans if not for another potentially conflicting reform objective. That is, educators see in the small-unit plan a means of broadening the array of programs from which students can choose to satisfy their interests and needs. Many district and school administrators want to extend greater choice to students, particularly in inner-city neighborhood schools with restricted curricular offerings. They also see the plan as a way of improving these schools' marketability. To the extent that subschools are made to offer distinctive academic programs, they may allow neighborhood schools to compete with magnet programs for higher achieving students and thus to create a more diverse student body.

While the aim of expanding student choice has merit, it tends to divert attention from considerations of increasing academic achievement and educational equity. The history of school reform suggests that when educators try to fit educational programs to students' extant interests and needs, they fail to maintain high expectations of academic achievement for all students; concern for the kinds of practices that enable all students to reach high levels of achievement is overwhelmed by interest in curriculum development. Consequently, small-unit organization plans designed to create differentiated educational programs pose the real danger that students will continue to be held to different standards, as is currently the case in different academic tracks and special-needs programs.

Can efforts to provide students meaningful educational options be reconciled with the need for substantive commitment to a higher level of educational attainment for all students? Perhaps, but only if educators squarely face the problem as they pursue the development of subschools of choice. It is not as simple as mandating that small units be designed for heterogeneous groups of students. Educators have piecemeal knowledge of effective classroom practices for heterogeneous instructional groups, but lack information about how to reorganize instruction on a schoolwide basis to provide equal access to quality

instruction. Such reorganization requires radical changes in the structure of special-needs programs, the curriculum, and teacher roles. There is not even a consensus yet among educators that academic tracks should be eliminated, or that all students should be required to demonstrate minimal educational outcomes; many are still convinced that some children cannot reach a higher level of educational excellence and should be steered into vocational education.

Oakes (1993) points out that radical reforms like detracking schools and providing equal access to educational opportunity require technical solutions as well as resolving the normative and political impediments to making such changes. Technical solutions must specify a comprehensive set of changes in school organization, curriculum, and instructional technique. In addition, educators need to be able to examine successful models if they are first to be convinced that they are possible and then to emulate them.

AN APPROACH TO SMALL-UNIT ORGANIZATION

In the next section I delineate an approach to small-unit organization that is geared to meeting students' diverse academic needs in "regular" classrooms. The essential features of small-unit design are culled from research on a wide range of schools that have created subunits. The research provides evidence that subunits whose design incorporates these organizational and instructional features have more favorable effects on students than those that do not. Such subunits are associated with greater teacher knowledge and familiarity with students, with students' sense of community and belonging, and with higher rates of attendance and academic achievement (Felner, 1982; Oxley, 1990, 1993). To provide richer details of small-unit design, I also describe the organizational structure and instructional practices of two schools with quite different small-unit plans. These schools demonstrate that the key elements of small-unit organization can yield a range of designs.

One of the schools is Koln-Holweide, a German comprehensive secondary school. American educators became interested in this and other German comprehensive schools a few years ago because of their extraordinary commitment to democratic school governance and teaching methods. Koln-Holweide's small-unit structure undergirds its governance and instructional methods. The school contains grades 5-10, plus an upper school of grades 11-13 for college-bound students. Koln-Holweide presently serves a student body of 1,600, about 25% of whom are immigrants, mostly Turkish. Many students are from poor, single-parent families. Koln-Holweide is an important case because its large numbers of students from lower socioeconomic and differing cultural backgrounds put its organizational structure and methods of instruction to a stringent test. With very few exceptions, all students complete 10th grade on time, compared to a national dropout rate of 14%.

The second school is William Penn High School, which serves students in grades 9-12. It is located in North Philadelphia, an area which has declined economically over the past few decades. The school was built to accommodate 2,500 students but currently serves 1,800, nearly all African American. A large majority are poor and qualify for free and reduced-price lunch programs and are eligible for Chapter 1 and special education programs. As part of a district-wide high school restructuring initiative, William Penn staff are in the midst of organizing the school into several charter schools. One of these subschools was designed to demonstrate effective organizational and instructional methods for heterogeneously grouped students. The dedication of the charter coordinator, in combination with the support of the restructuring project and Temple University, has succeeded in shaping a highly innovative and promising charter school.

Essential Features of Small-Unit Organization

The organizational requirements for small-unit schooling represent a highly interrelated set of features, each of which supports the others. The omission of one feature would seriously weaken the overall effectiveness of the small-unit approach. Yet these defining elements do not comprise a rigid formula that leaves no room for creativity. Koln-Holweide uses a horizontal plan in which each small unit contains students at a single grade level, while William Penn's vertical plan organizes a number of students from all grade levels into each unit. William Penn's small units are organized around different curricular themes and provide instruction in core subjects only, leaving electives organized on a schoolwide basis. At Koln-Holweide, the same curriculum is used for all students, and students receive all instruction within their units.

Instruction

Small-Unit Structure

All students and staff are organized into units of not more than 500 students for instruction. Units should be large enough to allow staff to teach exclusively within them, but small enough to allow staff and students to become well acquainted. A frequently suggested maximum size for a unit is 500, since it is then theoretically possible to know everyone by name.

A common pitfall of small-unit organization is the failure to organize *all* students and faculty into the small units. Students with special programming requirements, such as those in categorical programs or assigned to remedial classes, are often left out of the small-unit plan altogether. The existence of educational programs outside the small-unit plan has a seriously destabilizing effect. It increases organizational complexity to the point that the combination of program, class size, teaching load, and other constraints makes it impossible to assign teachers exclusively to a small unit--a requirement that should not be compromised, at least in relation to core subject area instruction.

Small units are not based on differing abilities. Students should be assigned to small units on the basis of random selection, student choice, or another method that insures a heterogeneous mix of students with respect to past achievement. Small units should not be organized around existing academic tracks, categorical programs, or other specialized programs, since this would heighten the social and instructional segregation of these students. The effect would be to create destructive social comparisons, perpetuate the practice of tracking (which has proven ineffective), and limit the use of promising educational strategies such as peer mentoring and cooperative learning.

The curriculum is common to all students. Unit staff employ a single curriculum for all their students. They integrate students from special education and other programs into regular classes. The staff's goal is to create a shared learning experience for students by eschewing the use of homogeneous grouping strategies.

Students remain in the same unit across years. Once assigned to a unit, students and teachers remain in it as long as they are in the school. In this way, teachers and students can capitalize on the knowledge that they acquire about each other from year to year. Teachers can also monitor students' progress more effectively. They are in a much better position to identify new trends in behavior and academic performance that may lead to course failure, and to intervene before failure actually occurs. Likewise, they can identify and nurture an emerging interest. The ability of a small group of teachers

to follow students across years strengthens the system of accountability for student success. Under the present system, teachers have little influence over the practices of their students' previous and subsequent instructors. They assume responsibility for only a small segment of the student's education, and no one teacher or group of teachers assumes responsibility for the student's education as a whole. While many are convinced that educational improvement requires extended instructional time, it is also clear that teachers can increase the efficiency with which they instruct simply by organizing themselves to provide greater continuity of instruction to students.

Subunit Structure

The unit is divided into instructional subunits containing an interdisciplinary team of teachers and their students. The division of schools into small units creates an organizational climate conducive to teaching and learning that, while not alone sufficient, is not easily achieved on a schoolwide basis. The subschools themselves must be divided into instructional clusters composed of an interdisciplinary team of teachers and a group of students they share in common. The organization of teachers across subject areas represents a student-centered approach to education concerned with the student's intellectual development as a whole. Further, the team-small group structure gives teachers greater flexibility in organizing instruction. Since each team provides most if not all of their students' instruction, team members can arrange class time to accommodate extended instruction, field trips, and projects without upsetting the school's master class schedule.

Teacher teams coordinate instruction across subject areas. The team/small-group concept stands in marked contrast to traditional, curriculum-centered education, which forces students to take a series of unrelated courses. Interdisciplinary teams can coordinate instruction to allow students to reinforce their learning of facts and skills across several subjects. Teams also facilitate teaching concepts and skills in the context of engaging, real-world endeavors which ordinarily involve diverse abilities. Finally, the cross-disciplinary team allows for joint problem solving and coordinated intervention in relation to individual students.

The day or week is structured to give teams time to meet. In order for team members to coordinate their work, they must be able to meet during the school day. Daily meetings may be unnecessary, but team members' daily schedules should be coordinated so that they can meet as often as necessary. Team members' preparation periods can be scheduled during the same time slot and back to back with lunch to accommodate team meetings.

Teacher specialists work with instructional units. Teacher specialists such as Chapter 1 reading and math teachers and special education instructors work with each interdisciplinary team to provide support for regular classroom teachers and designated students. These specialists function as peer coaches; they observe classrooms, engage in joint problem solving, model techniques, and team teach. Specialists also work directly with designated students in their regular classrooms rather than in isolation from regular students.

Teacher teams meet with parents. Whereas teachers in large, impersonal schools are mostly frustrated in their efforts to involve parents in the education process, those in smaller subschools have greater success. Even more important, however, teams have access to parents and vice versa. Teams often benefit from parents' support and assistance in developing and carrying out interventions with children. Conversely, parents want to have contact with their children's teachers as opposed to school officials who are less familiar with the students. Team organization often allows a parent to obtain

desired information from one teacher as opposed to having to contact all of the child's teachers. The longer that teams stay with students, the easier parents will find it to interact with teachers.

Instructional Features of Koln-Holweide Comprehensive School

Unit and subunit structure. At Koln-Holweide, each grade level is organized as a semiautonomous unit, comprised of approximately 225 students and 18 to 22 teachers. Within each grade-level unit, teachers are organized into three teams of 6 to 8 teachers, depending on the number of part-time teachers. The latter group includes the principal and assistant principals, all of whom teach a reduced classload.

Each team is responsible for the education of three classes of students; the team must cover all subjects. Since each team has only three classes, instructors teach two academic subjects and cover additional class periods (homeroom, independent learning, project work, or a third subject) and lunchtime activities. Unlike U.S. teachers, German teachers have training in two subject areas. The team and its students remain together through grades 5-10. In the fifth grade students are assigned to a team in accordance with the goal of distributing disabled, Turkish, slow and fast learning, and male and female students equally across the three teams. With only minor adjustments, these groupings are maintained across grade levels.

Teachers at Koln-Holweide view the team as their most valuable educational tool, not only because each team has an exclusive arrangement with its students, but also because each team exercises a high level of instructional autonomy. Team members devise each year's schedule, decide who will teach what courses, and plan parent activities. However, teams do not function in isolation. They coordinate instruction with other teams at the same grade level, and teachers collaborate regularly with other teachers in their academic department throughout the school. Nevertheless, the team has enormous flexibility in organizing instruction on a week-to-week and year-to-year basis.

Teachers at Koln-Holweide believe that a close, stable relationship between teachers and students is a necessary condition for effective education. Rarely is a student or teacher reassigned to another team for any reason. Teachers' multiyear relationship with students allows them to gain extensive knowledge of students and their families. For example, one team noted uncharacteristically unruly behavior on a student's part, brought it to his parents' attention, and together they discovered that the student was abusing drugs.

Academic program. The German education ministry dictates curriculum content in terms of what knowledge and skills should be mastered at each grade level, as well as the testing schedule. Standards for completion of the lower school, grades 5-10, are high. Like U.S. students, German students take math, language arts (German), science, social studies, a creative arts elective, and physical education each year. But, in addition, German students have shop, religious education, and hefty foreign language requirements: in fifth grade, they begin English, and in the seventh and ninth grades may add a second and third foreign language.

Academic tracks do not exist in grades 5 and 6. Contrary to school philosophy, however, national law requires students to be grouped into higher and lower math and English language classes in grades 7 through 10. Participation in the higher tracked courses and above-average grades are the entry criteria for the upper school. Teams minimize the effect on students by accommodating the requirement within the structure of the team/small group. They create and instruct a fourth, lower track class in math

and English when students reach seventh grade. Students are integrated with all other students in the remainder of their classes.

Special education students, including those with learning and behavioral problems and physical and intellectual disabilities, are mainstreamed at Koln-Holweide. One special education instructor is assigned to each team with disabled students, two if students' disabilities are severe. Not every team has disabled students, however. Regulations require that at least three special education students must be assigned to a class to have its size reduced from 30 to 22 students. As a result, disabled students are concentrated in about half of the classes. Specialists work with students in the context of their regular classes. In addition, classroom aides, who are sometimes adults performing alternative military service, assist special education students.

Turkish students in grades 5 through 8 receive four periods per week of instruction in their native language. In grades 9 and 10, all students may take a second or third foreign language in addition to English (begun in grade 5) and French (possibly added in grade 7); Turkish, Spanish, and Latin are offered as foreign language electives.

Instructional methods. Students work almost entirely in groups, and subject area instruction is mixed with several periods of advisement, free learning, and special projects not tied to a specific subject. Tests are given six times a year in foreign languages, German, and math. They are not standardized tests, however; each is constructed by the group of teachers who teach the subject at particular grade levels in each school.

In each class, students are organized as table groups. The groups are heterogeneous in terms of gender, ethnicity, and ability. The students belong to the same table group in each course throughout the year. This affords students ample opportunity to learn how to work effectively with others in their group; they do not lose time learning how to work with a different group in each class. Table groups meet once a week to tackle problems they encounter in working together; twice a year they take stock of the group's progress. Group members are expected to help each other and to contribute to the group's mastery of the work. Groups work independently of the teacher during much of the class. Their work assignment for a two-week period of time is often posted in the classroom. While groups work on an assignment during the period, the teacher may work intensively with a group who failed the last test or move from group to group to check on their progress.

Instructional organization. Koln-Holweide has an extended school day, 8:15 a.m. to 4:15 p.m. Students spend about the same amount of time in class per week as U.S. students; the extra time is allocated to staff meetings, lengthy lunchtime activities, and a mid-morning break. On a daily basis, the work of teaching and learning at Koln-Holweide is pursued in a more varied and less concentrated fashion than in U.S. schools. Over the year, however, students receive more hours of formal instruction than U.S. students, since the German school year is much longer.

Since each team covers all of its students' courses, the team can organize the class schedule as it wishes. Some teams begin the week with a free learning period devoted to orienting students to the week's work and end it with a special activity organized by one of the classes. Students' schedules vary throughout the week and allow for several double instruction periods as well as periods for individualized work, tutoring, and special projects. Teachers can offer this variety of instructional periods because they are not required to provide five periods of formal instruction in each subject. The precise number of periods varies with grade level and subject.

In the homeroom/tutorial, a pair of teachers, usually one male and one female, assumes one of their classes as a tutorial group. They keep attendance and other records on students and provide individual advisement. The pair meets with their students for two periods a week, one of which is devoted to human relations and sex education and the other to general student concerns. Tutorials are also called circle groups because teachers and students arrange themselves in a circle to facilitate face-to-face interaction. The circle also signals the operation of a kind of egalitarian group process to which teachers and students alike must adhere; both must observe the same set of rules governing verbal interaction.

Teachers also supervise students' free learning periods, of which there are several per week. These are unstructured periods devoted to students' individual needs and interests. The teacher may help students with their class assignments, advise them individually, tutor those who have failed a test or fallen behind in a class, or guide students' pursuit of special interests. Students who fail a test use their free learning time to work on the covered material with their teacher until they are ready to retake the test. In this way, all students are able to master the work, and none must repeat a course or grade. Free learning is an important innovation for several reasons. It provides balance to the comprehensive schools' dominant focus on group and cooperative effort, and introduces greater diversity into a fairly restricted secondary school curriculum. Finally, free learning allows teachers to work with students in areas other than the ones they teach, thus helping to coordinate and unify the team's work.

A third classroom activity for which teachers may be responsible is special topics. Students work six periods a week on a topic that is geared to acquaint students with the community and issues in living. Students explore new areas of knowledge and learn how to apply their academic skills to real-world enterprises. Individual study alternates with group project work. Students are sometimes organized across classes for these topics, sometimes across teams.

German teachers' daily schedules are highly varied; they do not instruct the same types or number of classes each day. Teachers have many free periods to use as they like. Tuesday afternoons are set aside for teacher meetings, at which time students are dismissed from school. Teams meet every other Tuesday afternoon. Teachers in the same subject area meet every six weeks. Department meetings are devoted to staff development; for example, the social studies faculty invited an Israeli in to talk about recent political events in Israel, and faculties often discuss research findings on new instructional strategies. A teacher in each subject area is elected to organize these conferences; he or she is relieved of one period of instruction for this purpose, but does not participate in school governance as is common with U.S. department heads. Subject area teachers at each grade level convene after the all-grade meeting to develop tests and to discuss students' performance on them. The teachers explore reasons why certain teams or classes may have performed differently and decide how to improve the work of the lower performing groups.

Instructional Features of William Penn High School

Unit and subunit structure. William Penn is presently organized into three subschools, two of which are magnet programs which draw students from across the district on the basis of scores (although these requirements are modest). A third subschool, the House of Masterminds, was developed recently to serve the general population. More than half of these students previously failed ninth grade. In response, the House of Masterminds staff devised an educational program that departs sharply from the traditional high school format. They raised standards while at the same time adopting an engaging curricular theme and individualized instruction.

The House of Masterminds is designed as a vertical house system. By 1994, it will contain grades 9 through 12 and as many as 500 students. At present, a staff of 11 teachers serves approximately 250 students in grades 9 and 10. African-American culture is used as the House's identifying curricular theme. Staff exercise some selectivity in assigning incoming ninth graders to the House: 75% of the students must have attended their middle school at least 70% of the time; but the remaining 25% of the students admitted need not meet this criterion.

A team of four teachers shares four classes of students in common at each grade level. Teams remain with the same group of students for two years. In order to limit the number of classes taught by each teacher to four, instead of the usual five, the team teaches an additional course to their students. Each team member teaches each class his/her specialty for 20 periods per week and, in addition, African-American Studies for five periods. In this way, teachers not only instruct fewer students than normal but also have more instruction time with them, an advantage this strategy has over reducing class size. While initially unenthusiastic about reducing their student load in this manner (because it entailed additional class preparation), teachers now feel having extra time with their students is helpful.

Academic program. Students take five of their six classes in the House: English, math, history, science, and African-American Studies. They take the other, an elective, with teachers outside the House. African-American Studies is taught as two half-credit humanities courses in both 9th and 10th grades. English and social studies teachers, who presently teach one course, jointly developed a curriculum that extends their regular English and social studies instruction to include African-American literature and history. They teach in a coordinated fashion such that students learn periods of African-American history in the context of literature written by African Americans during corresponding eras. Math and science teachers help students' develop social and psychological skills that foster self-esteem and positive ethnic identity.

Staff do not organize students by ability during their 9th- and 10th-grade years. A remedial math class that many ninth graders used to take was eliminated in the House and replaced with Algebra 1. After 10th grade, students who have not completed all their coursework are evaluated for promotion versus assignment to another charter or program. In practice, the only students who are not promoted into 11th grade are those who have missed an excessive amount of days.

Chapter 1-eligible students are included in each class. A Chapter 1 reading specialist serves the House of Masterminds. She collaborates with the interdisciplinary team at each grade level, providing assistance in two ways: (1) helping teachers develop strategies for improving students' reading skills in the context of core subject areas; and (2) directly assisting Chapter 1-eligible students in the classroom.

Approximately 25 students who have been assigned to the special education program are mainstreamed within the House of Masterminds; they take all of their core courses with House students. A maximum of three students are assigned to each class. A William Penn special education teacher and middle school staff select students who would be appropriate for the House, primarily students with mild to moderate disabilities, at the end of eighth grade. In this way, the students move directly into regular classes at the beginning of their 9th-grade year without first being placed in the special education program for assessment.

Instructional methods. At William Penn, staff use adaptive instruction, an individualized approach to instruction that goes hand in hand with mainstreaming special-needs students in regular classes. The strategy assumes that all students have unique strengths and weaknesses that respond better

to individualized and group instruction than exclusive reliance on whole-class instruction. Teachers use a variety of methods of organizing instruction, and students assume a large degree of responsibility for initiating and managing their own work. Students work in groups and at learning centers organized around different themes or problem areas. At each center, students may elect to do a particular activity to learn a given skill or master a certain set of facts.

Teachers use a combination of traditional and innovative methods to assess student progress. In addition to taking tests, students undertake projects and assemble portfolios of their work for exhibition at year's end. At the end of each marking period (November, January, April, and June), students who have not mastered the material covered receive an "incomplete" until they have completed it successfully. Students who receive an incomplete at year's end may enter summer school to try to complete the work. In any event, they have until the beginning of their 11th grade year to complete the 9th/10th grade curriculum without receiving a failing mark. At the beginning of 11th grade, the team evaluates their academic record and decides whether they should continue in the House or enter another charter or program outside the school.

Instructional organization. From Monday through Thursday, students have a three-period block of time each morning for math/science or English/social studies instruction. This block includes a double period of one subject, with the subject changing each day. In the afternoon, when students' interest may begin to wane, they have only two periods of instruction in the two areas not covered in the morning.

Friday is devoted to seminar, which takes several different forms in accordance with students' needs and interests. Because students have already had five periods of each of their core subjects in the first four days of the week, they are free to pursue a topic of their choice in the morning and either remedial or enrichment work in the afternoon. In the morning, some teachers offer a hands-on type of activity that allows students to delve more deeply into one of their subjects. For example, the English teachers sponsor creative writing and community newspaper projects, and the social studies teachers explore African-American history topics with students. Some teachers work on social problem-solving skills with students or lead community service projects. In the afternoon, students who have not successfully completed past coursework are given materials designed to guide them through blocks of the standardized curriculum. Teachers divide the curriculum into blocks and develop a packet of materials for each so that students can make up uncompleted work in a targeted fashion.

Teachers do not have additional team planning time built into their schedules. Each team does, however, share back-to-back lunch and class preparation periods in common. They use these periods to work together on a regular basis.

Student Support

Instruction and Student Support Roles Are Integrated

Traditionally, student support functions are carried out by guidance counselors and by teachers such as deans and grade advisors who have assumed responsibility for student discipline or advisement in lieu of teaching assignments. Hence, staff who provide these services to students are seldom the ones who teach them. Under the small-unit plan, instructional team members are much better positioned to provide academic advisement as an integral part of their responsibility for students' overall progress. Each instructional team plans and implements a coordinated program of instruction for their students and, by extension, monitors their progress, provides for a smooth transition from one year to the next, and

resolves behavior problems. In this way, instruction, guidance, and discipline are woven tightly together into a coherent pattern.

Integrating instruction and student support yields two other beneficial effects. Teachers who provided support services can return to the classroom full time, thereby reducing student-teacher ratios in classrooms. Guidance counselors are freed up to concentrate on student counseling, for which they are uniquely prepared. Currently, most of guidance counselors' time is taken up by student scheduling problems. Relieved of such bureaucratic demands, they are able to address students' more serious personal and family problems.

Each Teacher Serves as an Advisor to
One Class of Students in His/Her Unit

To insure that no student is overlooked, each teacher serves as an exclusive advisor to one class of students within his/her instructional unit. Assigning all students in a class to one advisor facilitates scheduling time for student advisement. Teacher advisors assume ultimate responsibility for guiding and supporting their students' all-around progress. This responsibility entails collecting information about their advisee from the rest of the teaching team, maintaining advisee records, communicating with parents, identifying problems early, and coordinating the team's efforts to meet advisees' special needs.

The Day/Week Is Structured to Allow
Advisors to Meet with Their Advisees

Time is set aside so that teachers can meet regularly with their advisees. Schools often have a homeroom period for school announcements and attendance-taking that can be utilized more effectively as an advisement period. Teachers may require individual sessions with students, but meetings with small groups or the whole class may sometimes be appropriate.

Guidance Counselors Work with Instructional Units

Guidance counselors work with particular instructional units to provide continuity in counseling and to coordinate their work with teachers. The traditional division of instructional and counseling functions often plays out as divisiveness between teachers and counselors: they view students through different lenses and sometimes make contradicting recommendations. Guidance counselors can help bridge this gap by consulting with teacher teams about how to respond appropriately to particular students' socioemotional problems and by sharing general strategies for managing student behavior.

Student Support at Koln-Holweide

At Koln-Holweide, one school psychologist and two social workers, one of whom is half-time, serve the 1,600 students. The very high ratio of students to guidance counselors in American schools is also found in German schools. But in Koln-Holweide the extremely high level of support that teacher teams provide reduces the need for student support staff. Moreover, guidance staff operate differently at Koln-Holweide. The school psychologist, in particular, has occasionally worked closely with the principal and assistant principals, helping to plan school governance meetings and organize staff development programs. She also holds a weekly counseling conference at which representatives of each team discuss problems with particular students and consider ways to further students' social development.

Student Support at William Penn

At William Penn, House teachers restructured the existing advisory period to accommodate more extensive advisement. Schoolwide, a 20-minute advisory period falls between second and third periods. In the House, teachers' classes are scheduled so that they have a double period of instruction with their advisory class on Mondays, immediately following the advisory period. The 10 minutes that students ordinarily use to move between second, third, and fourth period classes are added to the Monday advisory period to give teachers time to conduct individual student conferences.

Teachers use the conference to review a student's Progress Form, which identifies difficulties in any House course and the kinds of remedial actions that will be taken to address them. Remedial action may involve a teacher meeting with the student's parent or parents during the after-school conference period held one day each week. Teachers have access to a computerized student data base that is maintained by the team to facilitate advisement; each team member enters students' course performance scores and notes.

Co-Curricular Activities

Co-Curricular Activities Are Organized within Each Unit

A program of unit-level co-curricular activities advances the small-unit plan in several ways. Unit assemblies, productions, projects, field trips, and other extra-classroom activities strengthen students' sense of belonging to a separate and distinct subschool. Such activities allow students and teachers within the unit to become acquainted with one another in nonclassroom contexts and, consequently, to build multidimensional relationships. When parents are invited to participate, these activities also allow parents to interact with teachers on a broader basis that may help strengthen the rapport between them. Finally, a co-curricular program furthers student-centered instruction by dramatically increasing opportunities students have to assume an active role in the learning process.

Co-Curricular Activities at Koln-Holweide

At Koln-Holweide, students are able to participate in a variety of activities during the long lunch break. After a 20-minute lunch, students still have a full hour to mingle with students from all grade levels in arts and crafts, dancing, sports, and other activities. Parents organize some of these activities, and some teachers take responsibility for activities as part of their 24-period teaching obligation, for example, supervising the dances. Lunchtime activities not only give students a needed break, they allow students to mix with others of different ages.

Co-Curricular Activities at William Penn

At William Penn, parental activities are held on a regular basis each year. Prior to the beginning of the school year, parents and students are invited to a House orientation meeting. At the end of the first marking period in November, parents are invited to a dinner where they can talk to their children's teachers. Midway through the year parents are invited to an Open House which includes a tour of House classrooms. Parents are also encouraged to join students on field trips.

Physical Facilities

Unit Classrooms and Office Space Are Located in Adjacent Areas of the School Building

At a minimum, physical space must be allocated to each unit to allow students to take a core set of classes in one area of the building. Ideally, staff should have office space in the same area to maximize contact with students and one another. In this way, students have a home base, an area in which they can congregate and catch up with teachers. At the same time, students can travel outside the unit area to take advantage of specialized facilities for science, music, or art. Though minimal, these physical accommodations are crucial. School buildings are often so alienating that students do not even have a locker to call their own. Devoting an area of the building to a group of students satisfies basic security and social needs in a manner that supports rather than disrupts learning.

Physical Facilities at Koln-Holweide

Koln-Holweide was not architecturally designed to accommodate the small-unit system. Each team, however, has a group of adjacent classrooms in which it holds most of its classes. Students travel outside the area to classes that require special facilities, for example, science laboratory. Sandwiched between some classrooms are small rooms that give each team a place to meet and store materials in proximity to their classrooms.

Physical Facilities at William Penn

The House of Masterminds has relatively ideal physical accommodations, located on one floor that is divided into two wings by a central hallway. Each wing has two clusters of four classrooms; one instructional team occupies each cluster. Students leave the House area to attend science classes, held in laboratory space in another area of the building, and elective classes. Offices and a large work area are located in each wing. The House coordinator occupies office space in one wing. Teams meet in work space adjacent to these offices.

Unit Management

Each Unit Is Coordinated by an Instructional Leader

Each unit is headed by a teacher who functions as an instructional leader for the teachers in the unit. The instructional leader assumes responsibility for coordinating instruction within the unit so that the academic program is cohesive and the efforts of individual teachers are consistent with one another. The instructional leader facilitates the development of unifying curricular themes, projects, and courses; identifies training needs and implements a long-range program of staff development; and provides direct assistance to instructional teams on a daily basis.

Unit Coordinators Are Members of the School Governance Body

Unit coordinators represent the interests and needs of their units on the school governance body. They help formulate school policy along with the principal, assistant principals, and subject area heads. As subschool leaders with responsibility for coordinating the entire academic program of their students, their authority is second only to that of the principal. Academic department heads are normally the only

teachers with authority and a role in schoolwide decision-making. However, department heads are only responsible for instruction in particular subject areas. As a consequence, unit coordinators' authority must equal or exceed that of subject area leaders if the school is to implement a coherent, whole-student approach to education in place of one that is piecemeal. Without such authority, unit coordinators cannot maintain the integrity of their units.

Unit Management at Koln-Holweide

At Koln-Holweide, each unit is headed by a grade leader, who is relieved of six periods of instruction (one quarter of the class load) to coordinate instruction and provide representation on the school governance council. Teacher leaders from each grade level (5-13) constitute most of the members of the school governance council; coordinators of the upper school (grades 11-13), the special education mainstreaming program, and lunchtime activities, along with the school administrators, comprise the rest. The council meets each week for 30 minutes.

Unit Management at William Penn

In the House of Masterminds, the teacher coordinator is relieved of two classes to manage House activities. The House coordinator takes chief responsibility for curriculum and staff development and is a member of the principal's cabinet. Importantly, she also takes part in all major decisions that affect the creation of the school's master schedule, since it must accommodate the House schedule. Formerly, these decisions were made by the program chair, in consultation with the heads of the academic departments, and reflected the preeminence of the department structure. As charter schools have taken hold, however, the House coordinator's participation in scheduling reflects that the success of charters depends on their having at least equal standing with departments.

NORMATIVE AND POLITICAL ISSUES RELATED TO RESTRUCTURING

Koln-Holweide

The original impetus for the development of German comprehensive schools like Koln-Holweide was economic, but demographic and political factors also play a role in maintaining them. Germany found in the 1960s, as the United States did in the 1980s, that its traditional form of schooling did not produce enough well-educated individuals to drive its economy. Under the traditional German system of schooling, fourth-grade students are channeled into three different types of secondary schools on the basis of their academic performance; only one of these schools, the Gymnasium, prepares students for college. Comprehensive secondary schools, in contrast, were created with the mission of helping all elementary school children reach high levels of academic mastery.

The comprehensive schools comprise only about 15% of all public schools in Germany. They operate under the same regulations that other schools do, within a highly centralized and regulated system directed by federal and state ministries of education. In spite of this, these schools have managed to organize themselves in a radically different manner than other schools. In fact, in a country of declining birth rates, comprehensive schools have proven a practical alternative to closing tracked schools that are cunable to draw sufficient numbers of students; in the city of Koln, gymnasiums have begun to compete with comprehensive schools for Turkish students to maintain their enrollments.

New and transfer teachers receive no additional training before they begin teaching at Koln-Holweide. However, the teacher teams provide a powerful means of introducing new team members to their methods. The stable, cohesive nature of these teams, along with regular team planning meetings, provides a high level of inservice support for new teachers. Team support is also a factor in the successful mainstreaming of special education students. Special education instructors much prefer being included in the instructional teams to teaching special classes in isolation.

Finally, the teacher professionalism and democratic style of school governance found at Koln-Holweide cultivate support for comprehensive school methods. Teachers enjoy a high level of autonomy and flexibility and have ready access to their unit leader who, in turn, exercises a good deal of authority. The school governance council provides an effective method for addressing needs and conflicts.

William Penn

In keeping with the more localized governance of U.S. schools (compared to Germany), the political and professional factors that have influenced William Penn's reforms are exclusively local. William Penn is one of 22 high schools in the School District of Philadelphia involved in schoolwide restructuring. The thrust of these reforms is to organize each high school into a collection of charter schools, each with its own staff and unique curricular focus. The restructuring initiative is fueled by a large, multiyear grant from a local private foundation. A local university professor with experience in the areas of at-risk students and race and gender issues was hired as the chief consultant.

Project funds are used in a number of ways to support the formation of charter schools. Each charter that meets district criteria receives $21,000 and two fifths of a teacher position for each charter school leader. One of these criteria specifies that charters serve heterogeneous student groups. Further, much emphasis has been placed on staff development. Teachers have numerous opportunities to attend academic-year and summer staff development sessions as teams. These combined forms of support have empowered charter coordinators with good ideas and leadership ability to organize other teachers as well as students. While the district project has created conditions conducive to increasing access to quality education, two other factors have likely played a more direct role in changing minds and practices at William Penn.

The Temple University Center for Research in Human Development and Education (CRHDE) has provided assistance to William Penn over an extended period. Staff members with expertise in classroom instruction and school organization work as a team at William Penn. The instructional specialist offers staff development on a weekly basis and during the summer in support of the goals of individualizing instruction and teaming regular and special-needs instructors. The organizational specialist participates in school-level planning geared to supporting these practices. CRHDE staff spend extensive time at the school. They have learned to respond to teachers' identified needs and to bend, rethink, and add to their own agenda while continuing to pursue their essential objectives.

Finally and most recently, the district has mandated that special education students be mainstreamed. This directive gives CHRDE's efforts more credibility within the school, and has transformed William Penn from just another school experiment into a model program that other schools seek to emulate.

Conclusion

William Penn High School and Koln-Holweide Comprehensive School illustrate different, yet equally effective, means of implementing small-unit structure that increase *all* students' access to quality education. William Penn staff succeeded in designing a charter school that addresses the unique needs of students from impoverished inner-city neighborhoods, students with long histories of underachievement and a severe lack of family and community support. They altered their methods of teaching instead of their expectations for those who do not readily adapt to traditional schools. William Penn demonstrates what can be achieved when district leadership is proactive, resources (both financial and human) are used efficiently, and university collaboration is a key element of the restructuring plan. Koln-Holweide evidences, in addition, the role that federal and state politics can play in promoting quality and equity in education as well as the kind of school culture that supports these goals.

Clearly, the strengths of small-unit organization can only be realized if educators design units in which students of varying backgrounds and educational histories have an equal chance to succeed. Units must not intentionally screen out or inadvertently attract certain groups of students. Teachers need to reorganize existing academic tracks and special-needs programs and adopt instructional methods that allow them to meet diverse student needs in a common context. The alternative is to replicate inadequately structured programs, continue practices that deny students equal access to quality education, and perpetuate limited educational attainment for certain groups--an alternative that cannot be tolerated either ethically or economically.

To avoid such shortcomings, educators need ready access to comprehensive information about promising reforms at both the school organization and classroom level. Other support is also needed, however. District leaders must provide expertise, incentives, and staff development funds to pursue restructuring of special-needs programs in conjunction with organizing schools into small units. State departments of education must resolve the question of what all children need to know before they leave school. In the final analysis, what is needed is a renewed commitment to the goals of a public system of education. State and federal government leaders could signal such a commitment by tackling the problems (ineffective categorical program regulations, school district funding inequities, and so on) that stand in the way of reaching these as yet unmet goals.

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APPENDIX A: ADDITIONAL RESOURCES FOR PLANNING

Education Reports that Recommend Small-Unit Organization:

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The Laboratory for Student Success

The Laboratory for Student Success (LSS) is one of ten regional educational laboratories in the nation funded by the U.S. Department of Education to revitalize and reform educational practice in the service of children and youth.

The mission of the Laboratory for Student Success is to strengthen the capacity of the mid-Atlantic region to enact and sustain lasting systemic educational reform through collaborative programs of applied research and development and services to the field. In particular, the LSS facilitates the transformation of research-based knowledge into useful tools that can be readily integrated into the educational reform process both regionally and nationally. To ensure a high degree of effectiveness, the work of the LSS is continuously refined based on feedback from the field on what is working and what is needed in improving educational practice.

The ultimate goal of the LSS is the formation of a connected system of schools, parents, community agencies, professional organizations, and institutions of higher education that serves the needs of all students and is linked with a high-tech national system for information exchange. In particular, the aim is to bring researchers and research-based knowledge into synergistic coordination with other efforts for educational improvement led by field-based professionals.

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